APPLIED PSYCHOLOGY

Under the Editorship of

GARDNER MURPHY

APPLIED PSYCHOLOGY

REVISED EDITION

by

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PREFACE TO THE REVISED EDITION

This book, like the first edition, is intended primarily as a text for college courses in applied psychology. Such courses usually have general psychology as their prerequisite. Since many individuals wish to learn something of the practical side of psychology without taking formal courses, however, special care has been taken to introduce technical terms and concepts in a manner suitable for complete comprehension.

There may be some differences of opinion as to what properly constitutes the field of applied psychology. I have been guided in my choice of material by three considerations. First, what students themselves wish most to learn has been ascertained by surveying classes over a number of years. Second, I have given more emphasis to topics on which there is abundant experimental literature than to those still in the discussion and common-sense stages. Some of these latter, treated briefly now, may have become major topics by the time a third edition seems appropriate. Third, I have omitted certain topics which are sometimes included within the scope of applied psychology. Child psychology and educational psychology are major fields in their own right. A chapter or two in this book would only scratch the surface without providing worth-while treatment.

This revised edition is in actuality a new book. I have done much more than rewrite, correct, bring up to date, and replace old experiments and principles with new ones. It is a new book because of the great development in the field of applied psychology and because of my own practical experience since the first edition appeared in 1934.

Since writing the first edition I have gained nearly five years of

practical, full-time experience in industrial relations. For a year and a half I was with the Extension Services of the Pennsylvania State College, engaged in foreman and supervisory training, and had close contact with about twenty industries throughout western Pennsylvania. Then for over three years I was associated with the Industrial Relations Department of the Carnegie Illinois Steel Corporation, the largest subsidiary of the United States Steel Corporation. There I was especially fortunate in that the nature of my assignments permitted me to gain an over-all picture of the workings of industrial relations in a large company. I was first in the Research Division, and then on the staff of the Vice President of Industrial Relations. My duties also gave me the opportunity to visit frequently the twenty plants of the company.

As stated, this is a new book more than a revision. In the first twenty chapters hardly a sentence remains of the original. Topics have been dropped, new ones added, emphases have been shifted, and entirely new chapters included. Although the major truths of 1934 still hold in 1948, many ideas and theories have been revised, important experiments reported, new emphases laid, and whole new fields of research opened up. Only in some of the fields covered in the latter third of the book have few new developments taken place.

References on almost all topics are possibly fivefold the number available a dozen years ago. The problem has become one of selecting and shifting, rather than of seeking out, as was the case so often in 1934. I have retained my experimental and factual approach, but nowadays it is not necessary to be so painstakingly laborious in order to be scientific. I have cited at the ends of the chapters only a small fraction of the references which aided me in preparing my material. Furthermore, I have not cited names in the text itself except for studies reported in some detail. Such treatment may be appropriate for advanced treatises or monographs but does not aid students reading an intermediate text.

The principal changes since the first edition are as follows. Several chapters have been added: I, *The Field of Applied Psychology;* VI, *Vocational Aptitudes and Adjustment;* VII, *Getting a Job;* X, *Employment Procedures;* XXVII, *The Customer's Side* (of sales and advertising); XXXI, *Psychological Factors in Marriage;* and

XXXII, *Speaking in Public.* Also, several chapters have been created out of sections in the first edition, such as XIV, *Training,* and XIX, *Accidents and Safety.* Certain others, such as those dealing with the application blank, rating scales, interviewing techniques, working conditions, and scientific management, have been materially shortened, since in my opinion they have become of less importance to industrial psychologists.

I wish to thank my colleague, Dr. W. A. Owens, for giving me the benefit of his critical review of several chapters in the fields of guidance and industrial relations. Dr. A. R. Lauer made a number of constructive suggestions on safety. Outside reviewers can aid one in deciding what is psychology and what departs too far from its province. After a person has actually practiced industrial relations he finds himself less able to delineate the boundaries of the field. In union negotiation, for example, how much of the subject matter involved is psychology, and how much of it is economics, law, or just plain common sense?

Finally, I wish to acknowledge the assistance of my friends in industrial relations in companies all over the country in furnishing me manuals, forms, and other printed materials, letters of explanation, and painstaking replies to inquiries concerning their practices. Although I cannot mention each of these friends by name, their help is most gratefully acknowledged.

RICHARD WELLINGTON HUSBAND

Iowa State College,
December 1, 1948.

PART I

INTRODUCTION

CHAPTER I

THE FIELD OF APPLIED PSYCHOLOGY

1. DEFINITIONS

What is *applied psychology?* How does it differ from *general* psychology, *social* psychology, *abnormal* psychology, *child* psychology, or any of the other branches of psychology?

First, we might define psychology as a whole; second, examine applied psychology as a branch of psychology; and third, take a quick glance at a number of things which cannot properly be called psychology.

Inasmuch as the majority of readers of this book will already have had at least one course in psychology, we need not devote a great deal of time to defining the field. While there are a number of definitions, the majority of present-day psychologists would not quarrel seriously with this very simple definition: "Psychology is the study of behavior." Fifty or a hundred years ago, consciousness and the soul were important topics, but nowadays the psychologist does not concern himself particularly about these concepts, but leaves them to the domain of philosophy or religion.

The definition of psychology as the study of behavior actually covers the actions of all living organisms, including animals, children, and insane persons. But even though mental evolution and the behavior of animals are fascinating topics, a book of this nature is hardly concerned with them. And regardless of the importance of childhood in determining the adult's eventual make-up, we must leave the practical aspects of rearing children to the child psychologists, even granted that it might be perfectly logical to insert a

chapter or two on child psychology in this volume. Likewise, in psychiatry, the practitioner endeavors to treat and cure people suffering from mental or emotional disorders, but this field is too advanced and specialized to permit more than a quick glance here.

So, generally speaking, applied psychology will deal with the practical aspects of normal adult human behavior.

There is one more limitation against too technical a definition. Applied psychology could conceivably include within its proper sphere anything relating to the practical use of knowledge concerning human behavior. This broad inclusion might be defended; it would be difficult to dispute the common saying that a certain minister, doctor, lawyer, salesman, or politician uses "psychology," even though the particular individual may never have had formal training. True enough; the politician who wins a vote by kissing a baby is in a certain sense using psychology just as much as is the erudite scientist who records brain waves on complicated apparatus in his laboratory. But the politician is more likely to be operating upon guesswork or from assumptions, whereas the findings of the scientist are accurate and reliable and can be duplicated under like conditions. The principles and examples we cite in this book will be so far as possible those obtained under proper conditions by competent authorities in their fields.

II. The Field of Applied Psychology

So much for the approach to the field of applied psychology; what about its contents? The major fields to be covered in a survey course such as we are attempting here are as follows: vocational and educational guidance; personnel, industrial relations, safety; advertising and salesmanship; and applications to such fields as law, medicine, public speaking, athletics, and physical hygiene. The majority of these fields, it will be observed, bear upon earning one's living; that is, they use psychology to enhance vocational or business efficiency. There are several other perfectly valid fields which might be encompassed within this book, along vocational, avocational, social, or citizenship lines, but they do not fit in properly within the scope of aims of the present treatment, hence are omitted.

III. Pseudo-Psychology

There are many people who derive income from psychology besides those who have had proper training and use it in a proper way. In addition to the trained psychologists who use sound principles in their occupations, there are the charlatans who pretend to use psychology for mind-reading, fortune-telling, and spiritualism, not to mention dubious schemes for business promotion.

There are also many popularly held superstitions. Some of the charlatans are harmless enough and do no more damage than the fortune-telling cards dispensed from penny weighing machines. On the other hand, some spiritualists may secure as strong a hold on their victims as do blackmailers, as when they take advantage of the bereaved person's strong desire to get in touch with a deceased relative. Snap vocational guidance based on phrenology, handwriting, or some other type of guesswork may cause wasteful expenditure of money and time, and possibly even produce a lasting sense of failure.

We might dismiss with a mere wave of the hand these baseless means of profiteering from the present-day popularity of psychology. But if we did so, we would be no more convincing than those whom we are now accusing of misusing psychology. So let us glance briefly at several of these fallacies and see in what ways they lack authenticity.

A. *Phrenology* is founded upon the assumption that intellectual and personality traits are definitely localized on the brain surface, and that being strong or weak in any trait produces varying amounts of nervous tissue, which in turn create corresponding protrusions or depressions in these areas. None of these several assumptions holds true, however. The most important shortcomings in this train of reasoning are that such traits as sense of humor, reverence, friendliness, or mathematical ability are not located in any definite spot within the brain, and that exercise of any psychological function is not productive of the growth of nervous or brain tissue (7).

Phrenology, like much of pseudo-psychology, is usually based upon evidence from single cases, which is then assumed to apply generally. Dr. Smith, a famous scientist, has a wide and full fore-

head; therefore, all who have similarly shaped heads have high intellectual capacity. XY, a notorious gangster, has eyes close together and a narrow forehead; hence all like him are assumed to have criminal propensities. A person with a rising and dome-shaped head is supposed to be reverent, since his skyward areas are well developed.

Instance after instance could be cited, but these brief statements will demonstrate to the reader why phrenology has died out. A hundred years ago it was not a mere fad, but was taken as a serious science by many. For instance, a Baltimore newspaper of that time contained an advertisement for a young clerk which specified: "None need apply save those who have phrenological chart." Such specifications today take the form of school record, intelligence test score, and other evidences of achievements and abilities offered by an applicant for a job.

B. *Complexion* has often been thought to be an indicator of one's underlying traits. *Gentlemen Prefer Blondes* is the title of a well-known book, but at best it can only represent a personal preference of some men. Likewise, redheads are supposed to be highly dynamic and explosive, whereas brunettes are considered to be conservative, quiet, and withdrawing, but also more consistent and truer to their friends than their sisters in the other two complexion brackets. This problem will be discussed more at length in Chapter IV; here we shall examine one actual case where these invalid claims were being used in an endeavor to gain many thousands of dollars from a number of manufacturing companies. The writer received an inquiry from a midwestern company, excerpts from which follow:

"A very persistent attempt is being made to sell us a course in salesmanship for the benefit of our 50 travelling salesmen which is based on the premise that physical characteristics such as the shape of the head, texture and color tone of skin and hair, and of the eyes, are accurate indices to the buying habits of various individuals. . . . They are claimed to be significant as to the characteristics of temperament (not intelligence).

"For example, such claims are made as that a receding forehead is indicative of an individual who forms decisions very quickly, while on the other hand a rounded or dome-shaped forehead indicates the opposite type of individual.

"According to this system, the salesman should approach and plan his sales talk so as to appeal differently to thin skinned people and to the opposite type. Blondes are supposed to differ in their mental reactions from brunettes. 'Red heads' are supposed to have their own peculiarities which must be taken into consideration. The color of the eyes is equally significant, according to this theory.

"Finally, if these physical characteristics are an accurate guide to mental reactions, do you believe that the average salesman would be capable of making correct observations and 'diagnosing' so to speak various individuals with whom he comes into contact?"

After our preceding remarks, the reader can well guess the nature of our answer to this inquiry. We naturally replied to the general sales manager of this company—who wrote, as one can see, a very intelligent and comprehensive letter of inquiry—that attempting to correlate such factors as complexion and physique with complex action traits could produce little better than chance agreement, and accordingly that the firm would be throwing away a good deal of money which could be better spent in other directions. Although the author of the system claimed in his written publicity to be a noted psychologist, diligent search failed to show him listed in directories of psychologists or as having contributed any authoritative research or publication.

C. *Handwriting* is also said to be an indicator of personality. The so-called experts in the field of graphology postulate that the size and shape of letters reveal behavioral characteristics. Some of these interpretations seem at first glance to be plausible enough. For instance, those who write straight up and down, or cross their *t*'s with exactly half of the crossbar on each side of the vertical line, or put the dot of the *i* directly above the letter are said to be careful and meticulous, while those who write on a slant, cross their *t*'s in irregular fashion, omit the dot over the *i* or place it well away from the letter itself, tend to make quick decisions, to be hasty, and to be inclined to be careless. Open *a*'s, *o*'s, and *d*'s are said to indicate dishonesty; closing these letters suggests reserve and caution. Interpretations are similarly made of other general conformations of handwriting; but upon what these conclusions are based we can only guess.

In graphology we have a case of both ends meeting in the middle. A large city newspaper ran a series of articles by a self-styled handwriting expert, and the first article was an analysis of the signature of the President of the United States. The uncritical reader might be impressed, but the more observant person would immediately recognize that it was merely starting with two known factors and claiming a cause-and-effect relationship between them. A crucial test would be to take an unknown person's writing and ask the "expert" to deduce that individual's personality traits (*8*, p. 154).

A review of many experiments demonstrated that attempts to tie up handwriting characteristics with behavioral traits were all in vain. The conclusions of a vast amount of research were that, plausible as it may sound, no such correlation does exist (*3*). It would be very helpful if this were the case, since prospective employers would need only a sample of handwriting in deciding about employing or rejecting an applicant, and specialists in individual vocational guidance could use handwriting in advising an individual about a given occupation.

D. *Mind-reading* is another pseudo-psychological phenomenon in which many laymen believe implicitly. But fortunately for all of us mind-reading is impossible, or our private thoughts about other people might prove very embarrassing. Stage performances may be amazing and superficially very convincing, and oftentimes difficult to fathom, but attempted in a laboratory with all conditions open and aboveboard they are not reproduced. We must distinguish, however, purported mind-reading from keen observation. By watching a person's eye movements and facial expressions, one can sometimes deduce in general what the other individual is thinking, but it is not done through any sort of mental transference similar to, say, radio.

E. *Hypnosis* likewise is a popular topic with the layman, and often a psychologist present at a social gathering is asked to hypnotize someone. While hypnosis is a genuine psychological phenomenon (*4*) has been performed countless times, and has in the past served practically in psychiatry and medicine, it is today more of a stage and parlor stunt than a useful scientific instrument. As a comment on the place of hypnosis in psychology, the writer

might observe that of hundreds of friends in the field of psychology, scarcely half a dozen have ever hypnotized a subject.

F. *Many other fallacies* are held, but to disprove all of them would be too lengthy and laborious for our present purposes. It is often thought that intelligence can be estimated by a glance at an individual or his photograph; that certain animals possess color vision—thus bulls are said to be enraged by red, fish to be attracted by brightly hued flies. Actually, only birds possess limited color vision, and primates are about equal to man; but there is almost no color discrimination in other animals (7). Study of mathematics is said to develop a logical mind. Man has five senses, but some persons have a sixth and mysterious sense akin to that of prophecy; for them, Friday is an unlucky day to start a new business enterprise. There are many popular sayings, often uncritically accepted, such as "Practice makes perfect," "Two heads are better than one," "Bright as a child, stupid as an adult," and so on ad infinitum (*10*). These either are entirely inaccurate or need considerable qualification. Some of these we shall discuss later. As to the others, suffice it to say that there is scarcely a scrap of truth in any of these statements.

IV. Applied Psychology as a Scientific Field

Debating whether applied psychology truly has a scientific basis is perhaps of more historic than present-day importance, for now it is recognized by all but a few die-hards as a valuable and important branch of psychology. In spending less than twenty years in the field, the writer has seen changes which are perhaps more startling than those in the entire previous history of the subject.

Whereas psychology for centuries was a part of philosophy, it first became a genuine science when laboratory methods of physics and physiology were applied to human functions. But it still was not a practical field, nor did the psychologists of fifty or a hundred years ago make any such pretensions. In fact, an amusing story is told about von Helmholtz, the famous German psychologist, physiologist, and physicist, whose active career extended from about 1845 to 1890. He said that psychology would never become a true science because people differed from one another. Actually, while one of the principal tasks of any science is to find uniformities, psychology is

perhaps unique in that one of its major tasks is to discover *individual differences.* In educational and vocational guidance and in employment procedures we are looking for differences in aptitudes and personality traits in order to place a person in a position which both demands his particular talents and permits him to utilize those talents.

The birth of applied psychology may be said to have taken place in 1910. The proud father was Dr. Hugo Münsterberg, German born and educated but transplanted to Harvard. He had the vision to see practical uses of tests which had heretofore been confined to the laboratory, and from him and his pupils have stemmed many of the leading principles of personnel and vocational guidance.

Nowadays about half of the more than five thousand trained psychologists in the country are engaged in applied psychology, working in such fields as vocational guidance, personnel, industrial relations, advertising, mental testing, clinical work, mental hygiene, safety programs, child psychology, the Veterans' Administration, and other public agencies.

One of the contentions of the opponents of applied psychology was that the data upon which conclusions are based are relatively complex and unreliable, in contrast to data obtained through laboratory investigation. This argument may be granted to some extent, because it is not possible to submit many of these social situations to well-controlled laboratory conditions. Data applicable to industry or education must be obtained from industrial or educational sources, and these surroundings are more complex than the laboratory where extraneous stimuli can be eliminated or at least largely controlled. Even granting the lack of utmost precision, sufficient evidence of the merit of applied psychology is furnished by the hundreds of thousands of dollars saved by many companies by such practical applications as the use of psychological tests in employment, training and safety programs, and by proper choice of salesmen. Thousands of high-school and college graduates profit by sound vocational guidance and scientific personnel selection, and thus locate themselves in more suitable positions than they might have obtained otherwise. Colleges save large amounts of investment by denying admission to applicants who are obviously unfit for higher education. Soundly designed advertising campaigns

are much more effectively run than those using hit-or-miss methods, and produce sufficiently higher percentages of sales per potential customer that their economy cannot be denied.

In all fairness it must be admitted that in anything as complex as the adjustment of a worker to a job or the management of a large industry mistakes are bound to arise from time to time. We are that much better off if we recognize our shortcomings, for there is little doubt that the establishment of sound personnel selection was delayed by the absurd claims of some of the early workers in the field who, letting their enthusiasm run away with them, claimed to be able to solve all of a company's problems with 100 per cent success. When the difference between such overstatements and reality became apparent, a setback was inevitable. A more honest and modest claim is that we can produce *improvement* over earlier methods. The best personnel-selection program in the world cannot reduce turnover to nothing, but if we can reduce it by half or even a third we shall effect huge economies. And better still, exceptions to the rule will not be pointed out with so much emphasis. For instance, a good college-entrance program will eliminate the vast majority of potential failures, but there will always be a few apparently unpromising students who do passing work and a few others who appear to have superior potentialities but who fall by the wayside. Even granted these few departures from expectation, the improvement over earlier methods of college admission has been vast.

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PART II

APTITUDES AND VOCATIONS

CHAPTER II

PRINCIPLES OF VOCATIONAL SELECTION

I. Basic Philosophy of Guidance

A. The Field of Guidance

Guidance may be defined as assisting the individual to prepare for his future life, to fit him for his place in society. This broad and general description includes not only vocational guidance, but help in planning one's educational future, adjustment along personality and emotional lines, and the remedying or adjusting of disabilities and handicaps. We must emphasize that this view of guidance is very broad and supersedes the older and narrower aim of equipping the individual solely to make the most money possible commensurate with his talents. This latter may be one aim, but at least of equal importance are happiness in one's vocation and adjustment toward all other phases of life outside of the purely economic.

One might suggest that our definition of guidance is really a definition of modern education. That is perfectly true. Progressive educators insist that the whole child must be educated, and that the school which is giving nothing but purely intellectual fodder is doing only a small part of its true duties. Personality and emotions cannot be neglected. This is illustrated by the genuine encouragement given extracurricular activities in high schools. Unfortunately many colleges are behind high schools in this respect; they tend to tolerate rather than encourage activities outside of the classroom, and to surround them with regulations which are rarely

more than regulatory and often are more prohibitory than constructive.

Most up-to-date guidance experts insist that every teacher must do guidance work if a program is to succeed and be adequate for the entire student body. We may wish for at least one trained expert in each school or college to formulate the program, to keep centralized records, and to handle the more difficult problems of certain students. But each teacher furnishes guidance of a personal, educational, or vocational nature every day. The home-room teacher, the adviser, or one who knows the student intimately is much better able to give appropriate help than even a trained expert to whom the student may have been a complete stranger prior to a fifteen-minute interview.

One important reason why guidance—we could term it educational personnel work—is necessary in school is because in education we consider and handle each student as a separate individual. His aptitudes, family background, personal experiences, present interests, and future ambitions differ from those of any other student in his class. We cannot think in terms of gross numbers, as is often done in stores, factories, or military branches. Individual differences are present in these latter activities, but the emphasis is somewhat more constructive in education, possibly because future rather than present achievement is in question.

The reader may have noticed that we have spoken of guidance as helping or assisting the individual to effect a better adjustment. This is an important feature. Proper guidance cannot consist of ordering or even strongly urging the individual to make a certain decision. He should make his own decision, possibly assisted by the more mature and experienced counselor, but with as little pressure brought to bear as possible. Ideally, the counselor should guide in terms somewhat like this: "Now, as I see your problem, here are the points in favor of the decision, and here are the ones which suggest that your proposed decision might not be the best." Thus, gently leading him, one may suggest the final decision, but in such a way that the counselee has basically made it of his own accord. We can justify this reticence on the basis of an important principle of motivation; namely, that motivation to be satisfactory must come from within the individual. That which is externally

imposed is not convincing, whether it is advice on vocational choice, selection of educational program, or personality improvement, unless and until the student incorporates the suggestion into his personal thinking. This principle may account for the failure of many students to earn grades consistent with their intelligence scores; the subject matter does not appear to have much practical bearing on future life, so they see no reason to put themselves out just to make a higher numerical grade.

The only time strongly aggressive guidance might be justified is to prevent a serious failure which otherwise might occur. For instance, a student has a very strong ambition to become a doctor, but he may have too low a scholastic aptitude score, or his family resources may be entirely inadequate to support him through a long educational period. If he is thus discouraged, a strong disappointment may ensue for a while, but perhaps years of valuable time will be saved, which can be profitably spent in leading up to some vocation within that individual's possibilities. Tact must be used, of course, but the earlier the break is effected the less severe the shock will be. And even here, if the individual can be led gently to see that his possibilities, whether personal or economic, are highly doubtful, the final adjustment will have been effected pleasantly.

B. Scientific Guidance

Occasionally someone raises the question as to whether guidance (usually vocational) is a science or an art. We do not care to reopen this debate. However, it is our strong conviction that the closer we can approach to making it a science the more value our efforts will have. In other words, we should reduce guesswork, hunches, and subjective judgments, to an absolute minimum. We should use as many objective facts as possible: test scores, academic records including grades in various subjects, proven interests, definite personal and family data, etc.

It must be admitted that guidance is not standardized, nor carried on by formula. One cannot punch buttons to represent test scores and other factual data, turn a crank, and have one's vocational future appear printed on a card like one's fortune from a

weighing machine. Nor is such a development likely in the near future or even in the distant future. Always will the counselor need to have good judgment and common sense, but it should be backed up by specialized training which will acquaint him with principles and practices of guidance, and the use and interpretation of objective data. So, lacking the utmost precision, we cannot claim that guidance is 100 per cent-perfect. But our goal is to go in that direction as far as possible, and that can only be achieved by reducing subjectivity and the "inspirational" type of guidance. Gone is the inspirational counselor who sits behind his desk in majestic fashion, puffs out his chest, and in a deep bass voice proclaims, "Excellent profession, my boy, I wish you luck," and then goes home to dinner thinking he has saved a soul.

Guidance, to be effective, must use as well as collect test scores and other data. One group of investigators (*8, 9, 10, 16*) painted a dark picture of guidance, calling it little better than charlatanry, because test scores, administered at age of around 12, failed to correlate 8 to 10 years later with choice of occupation or success in it. But they had failed to give any guidance, even in the indirect form of giving out and interpreting the results of the tests. This could not be called guidance by the widest stretch of the imagination. It is much as if a medical-research specialist had discovered a sure cure for infantile paralysis and had let the serum lie unused on a shelf. Would we say the serum was no good? An individual may have certain hidden aptitudes and may not be very proficient in some skills in which he thinks he is good, but unless these abilities and disabilities are pointed out and diagnosed, we have no right whatsoever to expect a miracle of vocational selection to occur (*7*).

C. Use of Records

Since education is of the whole child, and guidance is preparation for future life, it is clear that the counselor should have available all possible data; the more the better. Far better to have some information which may not be used than to have missing some important facts which might assist greatly in appropriate counseling. Centralized records of a standardized nature will enable any

teacher, principal, or counselor to find desired information at a moment's notice. We suggest in Fig. 1 a number of appropriate items which may be valuable.

FIG. 1. Sample Guidance Record

Name:
Address: Telephone number:
Name of father or guardian:
His occupation: Income group: Home rating:
Religion: Race:
Intelligence score:
School grades [possibly on separate card, to show grades in each subject as well as the general average]:
Achievement test scores:
Personality test scores and/or teachers' ratings:
Interest test scores:
Projected occupations:
Hobbies:
Extracurricular activities:
Evidences of leadership (class or club officer, captain of team, leader in an extracurricular activity, etc.):
Physical health: Handicaps:
Scholastic honors:
Earnings; after school, Saturdays, vacations:
General physical appearance, desirable or undesirable:
Any other special abilities or disabilities which might influence educational or vocational guidance, or demand remedial work:
Disciplinary action: truancy, misbehaving, failing work.
Summaries of previous interviews:

Most of these speak for themselves, but let us comment briefly about two or three of these items. Religion, race, and family background may seem irrelevant in this land of equality and opportunity, but we know that they actually do make a difference. Prejudices may be favorable as well as unfavorable toward certain groups. For instance, once when I was visiting a vocational school, a call came in for a Polish Catholic boy between 21 and 30 experienced in driving a truck. Why, we don't know, but at any rate these were the employer's demands. The files were consulted by means of a "Findex" system; three such boys were found, and one was recommended.

Father's occupation and income, and home rating, may be valuable in giving educational guidance. It is virtually impossible for one to earn more than a small fraction of his expenses while attending medical school, so regardless of high personal qualifications, family inability to contribute may necessitate change in educational, hence vocational, plans. Activities outside of school may indicate valuable points: hobbies as genuine interests, earnings as having provided experience along certain lines, offices held as suggesting potential leadership ability as well as high social acceptability.

Results of previous interviews, by the same or other counselors, are valuable not only in shedding additional light, but also in showing trends of development year by year. It is strongly urged that the interviewer jot down the highlights of information uncovered and conclusions reached immediately after the boy or girl has left the room. Even by the end of the day details may have slipped or an item from one case may have become confused with another. Ideally, five minutes should be spent recording by dictaphone or shorthand before the next interviewee enters.

The information recorded may vary somewhat from one school to another, depending on the probable future of the pupils in terms of the type of community (farming, mining, industrial; foreign-born or colored; and percentage likely to attempt higher education) and the level of school (grade, high, vocational, college).

A last general principle to be emphasized is that guidance must start early in the educational ladder and it must be continued as long as the individual remains in school. (Naturally, guidance by friends and superiors continues all one's life, but here we confine ourselves to those phases which education can supply.) Psychologists recognize that personality and emotional habits must be formed correctly in the first place; breaking down and building up new ones in place of bad ones is many times as difficult, and usually not completely satisfactory.

Such guidance practices are necessarily very much interrelated. Educational guidance even at the earliest levels will influence ultimate vocational choice; conversely vocational choice will often dictate the curriculum elected, say as to whether a grade-school child should go to a vocational school or a general high school,

and if the latter whether it is wise for him to take the college preparatory course. Even at the college level students may benefit tremendously from such courses as "How to Study" and "Remedial Reading."

II. Educational Guidance

Although we are discussing various phases of guidance, any separation is largely artificial. All forms of guidance are usually given simultaneously. For example, a high-school boy wishes to become a doctor. If we agree that his various aptitudes warrant his attempting to attain this ambition, we have given him vocational guidance. At the same time we are giving him educational guidance by encouraging him to take college preparatory courses, go to college, and eventually to professional school. Then we may suggest certain personality traits which will need to be cultivated to insure greater success in that profession, and possibly also certain remedial or adjustive work.

Educational guidance depends largely upon one's intellectual aptitude, best measured by means of an intelligence test. We should encourage the student to set his educational, hence vocational, aims neither too high nor too low for his aptitudes. This aspect of guidance is of value to society as well as to the individual. Turnover is costly, in terms of time to break in a new man, his lowered efficiency, spoiled materials—not to mention the loss to the man who was not properly fitted in the first place. Turnover occurs to the greatest extent among those with abilities too high or too low for their jobs. Those too low cannot keep up; those too high resign from boredom if they are not advanced rapidly. The latter also may actually be poorer at their work. As proof, one survey of accidents among taxi drivers showed that those with higher than average intelligence scores had more accidents than those about the average; presumably they did not need to concentrate their full attention on their driving, so were apt to daydream, with disastrous results.

In Table 1, we quote maximum educational levels expected for individuals with different IQ scores, with suggested occupations for each degree of education. Here again we see that educational guidance often involves vocational guidance as well.

TABLE 1. Intelligence Quotients Necessary for Completion of Various School Levels.[1]

0-69	Feeble-minded	Only the highest can attend school at all, and they cannot progress beyond marginal literacy; arithmetic ability of any sort doubtful. Employment dubious.
70-89	*Dull normal*	*Several grades only; simple reading and writing,* rudimentary arithmetic. Vocational training course advisable. Unskilled or semi-skilled jobs.
90-99	Low average	Complete grade school and junior high school; if able to do senior-high work, it would suggest low standards in the school. Skilled labor; routine clerical; simple selling.
100-109	Superior average	Complete high school, and perhaps with diligence a college of not the most strict *standards. (The average for state universities* and colleges of similar standards is about 110, with 105 a practical minimum.)
110-119	Superior	Do good work in college; ability to complete professional school.
120+	Very superior	Not only college and graduate levels, but ability to do advanced work in certain specialties, leading to eminence.

Especially in regard to advising high-school students whether or not to attempt college work, we should be realistic and frank. The mediocre high-school student will be at best marginal in college. If he does graduate, he will have acquired so scanty a real education that within a short time he will show no marks of having undergone higher education. It would be far better for him to train for some definite vocation and make a success of it, than to be a college failure. Even if the student is of fair ability, but shows little interest in "book learning," nine times out of ten no change in work habits will take place if he should enter college. So the teacher or principal should not pass the buck to the

[1] For more detailed information on the significance of these IQ levels, consult Chapter III, or the appropriate chapter in any recent text in general psychology (6).

college, unless there is a sound reason to expect that definite improvement can be expected.

We should not only study aptitudes in terms of the general level, but look for abilities predictive of high or low achievement in particular subjects. While the various factors composing general intelligence, which determine scholastic aptitude, are *roughly* on a level, there are enough individual variations within one homogeneous group, such as college students, so that psychologically unjustified are such statements as, "No man is educated unless he knows at least one foreign language," "Everybody should be compelled to take chemistry," or "Economics should be a required course." The more progressive colleges have lately been laying less emphasis on strict sequences of required courses. It is recognized that some students do not have aptitudes for mathematics or chemistry or foreign languages, so they will be better prepared to take their place in the world if they take other subjects more in line with their aptitudes and interests and of more possible use in years to come. One qualification is necessary, however: we only recommend this for students with genuinely poor aptitudes along certain lines. Laziness or other rationalizations should not be accepted.

III. Vocational Guidance

A. *Major Problems*

Probably the two most important decisions in one's life are choice of vocation and choice of marital partner. While either may be subsequently changed, it is only at great cost and distress. Change of vocation means wasted time, the necessity of commencing anew, possible repercussions on the personality because of a failure, and difficulty of obtaining favorable recommendations.

Yet it is estimated that at least half of the population selects its life's vocation in a haphazard manner. Neither the educational system nor the individual's own initiative prepares him to take his proper place in economic society. The child who stops formal schooling with the grades, or one who graduates from a general curriculum in high school, or even in college, is not necessarily ready to earn his living. Only those who take commercial or technical courses in high school, or professional training during or after college, are directly prepared. The others have to take their

chances of "getting a job" in almost anything that turns up, regardless of its nature.

In a study of over 500 high-school pupils (2), less than half had decided upon a vocation, and only a tenth of these had decided for themselves. The great majority had had their vocations suggested by parents, teachers, friends, or were merely imitating some admired elder. Only a fifth of this high-school group had any comprehensive idea of the nature of the vocation they were about to enter. Other studies have shown the same general lack of foresight, information, and factual guidance in selection of occupation, in terms of genuine abilities, interests, and possibilities of attaining that goal.

The problem becomes progressively more serious as economic society becomes more complex and as efficiency is more and more demanded. As long as this country was in a growing (frontier) stage and raw materials were to be had almost for the taking, only very serious vocational maladjustment led to definite failure. Now, both personnel selection and vocational guidance need to be much more painstaking and exact. The problem includes not only the efficiency side, but the human aspect, that of happiness and satisfaction in one's work.

Even in those cases where a vocational choice has been made, there is no guarantee that it has been made accurately. Where the decision (or hunch) has been made on the basis of drifting into father's occupation, following an admired older friend, choosing on the basis of the spectacular angle (e.g., aviation, radio, acting, construction engineering, or top salaries), the chances of success would hardly be better than if one drew the name of the vocation out of a hat. "Filling dad's shoes" has at best only tenuous justification. A boy may inherit some of his general aptitudes, although not in a specific way; he has a chance to imitate his personality traits and general attitudes; and he has an opportunity for firsthand contact with his father's vocation. But this is all; too often such pressures fall short, with resultant failure and unhappiness. In every case, choice should be made by the individual himself only after thorough study. He should find out all he can about the nature and requirements of the vocation, and match his own capacities and interests

with these to see if he is well fitted for it. Ideally, in this he should not only use his own resources, but consult a vocational counselor and other persons who are fitted to judge him and are well acquainted with the occupation under consideration.

Thus we see, as with all forms of guidance, that *the fundamental principle underlying the ideal type of vocational guidance is to insist that the individual find and make the final decision as to his own vocation.* One at best may advise the boy or girl that the conditions to be met in certain occupations are not such as to enable him to function at the highest level of which he is capable, or to allow him to enjoy himself while at work as much as his personality and interests should allow under conditions of ideal choice of vocation. We must admit that this type of guidance is largely passive and oftentimes negative; one only tells the individual whether or not he is suited for taking up work in a field he proposes. Positive guidance is more difficult. If a boy has no serious ideas at all, it is virtually impossible to tell him that he is suited to become a lawyer, a bricklayer, or a salesman. It is more feasible to let the leaning toward one or several occupations originate within the individual, and then determine suitability in terms of his aptitudes and other vocational considerations to be suggested in these several chapters.

Among pioneers in the field of vocation-finding is the Milwaukee Vocational School. The keynote to its policies is contained in the following passage, written by its founder and recently retired director, Robert L. Cooley, as an introduction to the series entitled *My Life Work* (3). This series analyzes a large number of common occupations to acquaint the candidate with duties, types of tasks encountered, training necessary, and future possibilities.

"All work is hard unless you care for it and are interested in it. Interest is to work what oil is to machinery. A machine operating without oil will grind itself to pieces and shorten its life, and in the meantime use more power and produce less. The human body, like a machine, has only a certain period in which to serve and live.

"There is no such thing as an easy job that is worth while. Some kinds of work require muscular activity; others demand mental activity. In either case, any worthwhile job just about balances with the amount of energy

that it requires in the course of a day. If the work is of a kind that you care for, you will accomplish more and be less worn out at the end of the day.

"All kinds of honorable work are necessary to society. Whatever one's job or position may be in industry, one should become acquainted with what goes before or comes after the particular task upon which one is engaged.

"The conditions found in any industry affecting hours, wages, surroundings, and workmanship are largely dependent upon the interest, the intelligence, and the cooperation of those engaged in it. No one ever gets a dollar that he does not earn without some one's earning a dollar that he does not get."

B. Sources of Information

One constant source of wonder in practical guidance work is the scanty amount of information possessed by the majority of boys and girls about occupations they are considering taking up as their life's work. The following cases are all too common:

A boy desired to become a baker, took preliminary training, and had a position offered him. Negotiations went along very smoothly until the employer said: "All right, then, report at eight tonight. You will work from then till five in the morning." When the boy expressed surprise he was told that practically all the baking in the city went on at night, since the customers demand fresh bread and rolls in the morning. The upshot of it was that his desire to become a baker was not sufficient to overcome the disadvantages of working at those hours. If he had taken the pains to find out more about the working conditions surrounding the baking industry he would have saved the time, trouble, and disappointment.

A girl, a college senior, had for the past five years intended to be a nurse. She quit nursing school after just one week, finding the duties totally incompatible with her likes and dislikes.

If either of these young people had made even a superficial study of the demands and nature of their choice of occupation, they would have changed their minds before getting as far as they did.

One who is seriously interested in choosing his vocation intelligently can obtain crucial information about it in many ways. Let us name a few:

1. Visits to factories, stores, hospitals, courtrooms. . . .
2. Talks, say given in school assembly, by successful men in various fields, interviews with personnel officers of prominent companies, or with men from such service organizations as Rotary or Kiwanis.
3. Reading biographies of successful men, or talking to men in leading vocations in one's home community.
4. Movies have been extensively used to show the duties of people in various occupations. Students can see if these are to their taste. But these movies must be representative, and not merely on the spectacular aspects.
5. Books, bulletins, and other printed matter describing the duties and demands of the leading occupations, which can be kept on file in the library or guidance office.
6. Local information must be available, since the majority of high-school students and many college graduates settle in their home communities. So, one of the duties of the counselor is to keep in contact with local business and industry, both to help students vocationally and to be able to give them appropriate advice.
7. Trying out the occupation, in vocational school or as a job after school or during vacations. If the occupation is highly skilled and demands training, being errand boy or some other flunky will give opportunity for firsthand contact and study. Several colleges have a program of alternate work and study periods, each lasting six weeks or three months.

Several warnings must be given: (1) If a highly successful man speaks or if one reads his autobiography, one is in danger of gaining a glorified impression of the joys and satisfactions of that vocation, and of finding soft-pedaled the difficulties. No occupation is "all gravy"; someone has observed, "There is dishwashing [routine work] in every vocation." If one does not mind the routine or drawbacks (a doctor being called out of bed in the middle of the night, a minister having to listen sympathetically to all sorts of petty troubles, a teacher correcting examinations and staying after school to tutor borderline students), and if he finds the good points

especially pleasurable, then from a standpoint of interests his choice will have been well made. (2) It should be strongly urged that anyone describing a vocation to a young person should point out the difficulties in training for and pursuit of the occupation, the hardships, the fluctuations from year to year, etc. As one example, while a few lawyers may earn more than $10,000 a year, the nation-wide average in prewar years was less than $2000. Certain highly skilled workers may earn nearly two dollars an hour, but a four-year apprenticeship may be demanded before one receives his trade card. (3) One should think not only of the leaders in the field, but of the average participant. This is particularly illustrated in the musical field, where a few top performers may command $2000 or $3000 for a single performance, while a study of musicians on relief (under the guise of "keeping musical talent alive") showed that 95 per cent had never earned a cent by their own efforts. In aesthetic fields there is virtually no normal distribution. A talk or an autobiography by a Ford, a Kreisler, or an Eisenhower might be seriously misleading. In similar measure would be one by the leading manufacturer, surgeon, lawyer, or baseball player of the state.

Following our idea of guidance being separate for each individual, it is well to look for points perhaps customarily considered as minor, which may be critical for that individual in terms of that vocation.

C. Trying Out Vocations

Reading, personal interviews, or talks cannot tell one everything *about a vocation. By far the best way of finding whether one's interests* and abilities coincide with the demands of an occupation is actually to go through the operations and make sure that one has the necessary aptitudes, that most of the duties are pleasant, and that none are prohibitively unpleasant. Any occupation has monotonous or unpleasant duties, but if one's interests are genuinely along that line of work these will not bulk large in proportion to the pleasant aspects.

This vocational tryout is the essence of the program of the Milwaukee Vocational School. Most of the students have only grade- or high-school training; there are very few college graduates. The

vocations in which the individual may try himself out are mostly the skilled trades—printing, watch-repairing, carpentry, stone masonry, beauty culture, barbering, baking, typing and stenography, electrical work, sign-painting, forge-work, stationary engineering, etc. The candidate may try several vocations one after another to see which he prefers and in which he does best. Those under 16 are allowed to work within a group of vocations for a while—for instance, in various phases of the building trades—and if one finds nothing particularly interesting he may try another group, say printing or metal-work.

Every effort is made to keep the work practical. While the purpose of the school is to let the individual find his own vocation, this does not imply that he is playing around or is not learning anything serviceable. All work done is full-sized and of exactly the same type as that found under daily working conditions. For example, those learning the printing trade do all the work of that type needed within the school, which incidentally is a sizable amount. Bakers actually make cakes and bread; barbers cut hair; bricklayers use standard bricks and mortar and make regular walls, corners, arches, and designs. The instructors are all expert workers who keep in contact with industry, and are not only highly skilled workers themselves, but are also men of foresight and wide outlook. Instruction is all individual in nature, rather than group, so that a person may proceed as fast as time and ability permit. Instruction is also provided along general lines, such as English or algebra, for general cultural development of the individual.

When a course is completed the future of the boy or girl is dependent on two factors: (1) rating by the instructor as to performance and potential ability; and (2) his own liking for the type of work encountered. A rating sheet is filled out by the instructor on these counts: trade adaptability, industry, initiative, punctuality, reliability, cooperation, intelligence, stability, attitude, courtesy, appearance, health, physical defects, work recommended, and other incidental remarks. It will be noticed that these points take into consideration potentialities as much as present skill.

Not all the work deals strictly with vocation-finding, however. There is definite training along both practical and theoretical lines. To start with, there is naturally a good deal of learning during the

period of vocation-finding. As proof of the quality of work done by this school we may cite the fact that many concerns in the city of Milwaukee will not accept new employees or apprentices unless they have taken training in and are specifically recommended by the vocational school. Two types of training after employment are also carried on. While the individual is actually earning he may be sent to the school for a half day or a full day a week to learn various procedures not always picked up to best advantage under actual working conditions. Heat treating of metals is an example. Or he may undertake more advanced work to enable him to secure advancement.

That this training is valuable both to the individual and to the employer has been disclosed by a number of surveys. One traced the subsequent careers of plumbing apprentices. Of those who had been sent by the vocational school, 78 per cent were still working at that trade at the end of the year, while of those who had been employed from other sources only 23 per cent were still live material for the industry, the rest having been lost for one reason or another. This comparison certainly shows the value of scientific methods of vocational guidance and vocation-finding as opposed to the too-common process of stumbling, more or less, into some vocation.

Such a tryout is valuable for anyone, regardless of his level of education and probable level of vocation. Actually trying it out is the best way of ascertaining the fundamental nature of a vocation, and of making sure that one will not be disappointed later should he find conditions somewhat different from expectation. This may be done through summer, vacation, or part-time work, without definite commitment. In many ways the boy or girl who is forced for financial reasons to work during the summer is eventually better off for having had the actual contact with everyday phases of work. Similarly, one can profit more if he works at something he might continue later than if he acts as bellboy, waiter, lifeguard, or farmhand. If one is wavering between advertising and architecture, he might manage to spend one summer in each, doing routine work and observing the various types of problems which come up. One may have to undertake such work with little or no financial return, but the person who is seriously concerned about

his future will not begrudge a few weeks spent in ascertaining in the best possible way whether or not a vocation suits him.

Here are several examples of college students who spent their summer vacations profitably. (1) One thought of architecture, so spent six weeks doing routine work in an office with no salary, and decided at the end of that period that he would not care to continue at that work. (2) Another did "flunky" work in a hospital, found it not at all annoying, and the work he observed doctors doing thrilled him; he is now a prominent young physician, having completed his medical course with a brilliant record. (3) A third assumed he was committed to a business career, but after spending several summers between college years working in a large city store, he made a different decision. (4) A fourth was much interested in agriculture, so obtained a job on a large Nebraska farm for the summer. While he enjoyed the work immensely, he found the hours so long that he had no time for outside interests, so he finally decided against the occupation.

Military service has given millions of young people opportunity for vocational training and tryout. Here are two examples written by the individuals themselves, one in which the student's original ambitions were confirmed, and the other in which intimate contact with everyday duties of the vocation led him to change his plans.

(5) "I have been interested in engineering, but more on the human than the strictly mechanical, chemical, or electrical sides. I completed the necessary required engineering courses, and took as electives courses directed toward the personnel phases of industry. In four years in the Army I had opportunity to gain personnel experience in the Western Pacific, in lines that would be comparable to the industrial labor-management situation: selection, training, transfer, and promotion in particular, as well as the less tangible sides of personal conflicts, health and safety. These experiences confirmed my leanings, and on returning to school as a graduate student I have chosen to continue this study of labor-management relations as viewed by the engineer."

(6) "When I entered college in 1941 I had decided to train for aeronautical[1] engineering. I had been interested in aviation since I was 13, and had built many model planes. I left college in 1943 and was assigned to the Air Technical Service Command, with duties involving aeronautical

engineering work. I neither cared for this work nor felt that my aptitudes were along the line of aeronautical engineering, although my interest in aviation as a whole was undiminished. When I reentered college in 1946 I changed my curriculum to General Engineering, with the intention of securing a position in production engineering or technical sales in the aviation field. Vocational guidance tests bear out my personal feelings."

In each of these six cases the decision, favorable or unfavorable, was distinctly aided by the tryout. We cannot too strongly recommend such experience.

D. Occupational Information

We have suggested that vocational guidance must match the attainments and potentialities of the individual to the demands of the vocation. At present, knowledge of the demands of the job lags far behind information about psychological traits of those seeking it. Even if aptitude testing were perfected, guidance must remain incomplete until accurate appraisals of abilities, training, and characteristics necessary for success in a given position are obtained. Just what makes a successful lawyer, a successful journalist, a successful painter, a successful auto mechanic?

Thorough occupational analyses have been prepared on two levels, skilled and professional. A recent book (*11*), for example, deals with fields within industry, business, agriculture, engineering, physical sciences, natural sciences, medical sciences, social sciences, modern arts, education, and religion. Each field is subdivided; for instance, industry into aviation, radio, construction, painting, printing, and miscellaneous occupations. Farming speaks separately of *the general farmer, truck, livestock, dairy, corn-hog-cattle, poultry,* fruit, wheat, cotton, and other types as well. Engineering is divided into ten branches, medicine into eight. Each occupation is analyzed according to its principal duties, qualifications, training necessary, financial investment and equipment needed to start out, earnings, sources of further information, and jobs related to that particular field. In some instances difficulties and disadvantages are pointed out, such as that a dairy farmer must milk and care for his cows twice a day 365 days a year, regardless of how he feels or what else he might care to do (whereas the fruit grower may be relatively idle 2-3 months in the winter), must often live away from a town and

perhaps be without electricity or inside plumbing. Danger of low income due to low prices, diseases, and weather conditions should also be appreciated. The seasonal character in some of the building trades should be pointed out.

Full knowledge is essential, since interest may come from some of the more superficial or spectacular aspects of the vocation. For instance, a boy has built a radio set and forthwith decides to become a radio engineer. But his interest vanishes when he finds he will have to study for several years, learning advanced theories and practices in alternating and direct currents, magnetic theory, properties of vacuum tubes, coils, and condensers. Learning all these advanced technical details is an entirely different proposition from carrying on a little random experimentation, where neither special originality nor a high degree of efficiency and neatness is required.

On the professional level, a very valuable book has been prepared, *Students and Occupations,* under the editorship of E. G. Williamson (*19*). To illustrate best, we might raise in the form of questions some of the highlights in the chapter on "Medical Occupations." "Are there too many doctors?" "Is human need adequately cared for?" "What is the future of medicine?" "What are a doctor's duties?" "What specialization is possible and desirable?" "What are the average earnings at various ages, in various communities, and in various forms of medical practice?" "How lengthy is the training before one can practice?" "What traits of various natures are necessary to do successful work in the medical school?" "How good are opportunities for women in medicine?" "What about occupations less stringent than direct medical practice, but for those having largely similar interests, such as public health, nursing, dentistry, pharmacy, veterinary medicine, medical social service, occupational therapy, medical technology, or dietetics?"

E. Points to Consider in Vocational Choice

There are a number of points which one should consider when matching his own interests and talents with the demands of the occupation. The first four mentioned below are probably of most importance; they will be analyzed in detail in the next few chapters. so are only briefly introduced here.

1. INTELLIGENCE. A person obviously must have a certain degree of general ability to take care of any occupation beyond the most routine in nature. Before recommending that anyone enter a vocation the adviser should consider whether the individual's ability meets the demands of the vocation. Too high an intelligence as well as too little ability would disqualify a person, since he could do something else better and lead a more efficient life. (See Chapter III.)

2. PERSONALITY. Persons of equal ability are not equally well fitted for various types of work, even on the same broad level. One man will become a general superintendent, while another will become equally eminent in research work. The former is able to handle people, while the latter tends to shun society and works best when dealing in abstract concepts. It takes a certain type of person to be a salesman and another to be an artist. Yet one occupation is no better than another. (See Chapter IV.)

3. INTERESTS. Likes and dislikes constitute another aspect of personality. If one likes the type of problems which the doctor or engineer meets, he is far more likely to succeed and be happy in medicine or engineering than one who has equal ability but prefers other activities. Some persons are more fitted for manual and outdoor work, others for detailed machine operation, and still others for office work. Let each of them do as his interests suggest. However, one must make sure that interests are genuine and not secondhand expressions from suggestions on the part of parents or friends. Actual *test scores give the truest indication of fundamental interests.* (See Chapter V.)

4. SPECIAL APTITUDES. It is an axiom in the field of guidance that one should capitalize on his assets and minimize his liabilities. If one has especially good talent with figures, names, motor skills, finger dexterity, spatial discrimination, or abstract concepts, he should make use of his best endowments and not handicap himself by attempting something in which his talents are mediocre. (See Chapters VI and XI.)

5. PHYSIQUE. This is an important attribute in some vocations, although probably of far less consequence than it was a century ago. The matter of mere brute strength is to be taken into consideration only in a few crude manual-labor positions, where a certain minimum might be required. Health, however, is a crucial

matter in many occupations, since a person must be fairly robust to stand certain types of work over long periods of time. Some occupations are hazardous to anyone with a tendency toward tuberculosis: stone-cutting, working where there is dust or lint in the air, in especially warm rooms, and in some cases any work that is wholly inside. Salesmanship, requiring standing eight hours a day, is very fatiguing at first, and may be extremely difficult if one has any foot trouble. Likewise, certain occupations put an undue strain on the heart, back, abdominal muscles, eyes, and nerves. Skin disorders may accompany working in extremes of heat, as around an open hearth in a steel mill. Painter's colic is another well-known occupational disease. This type of guidance, it will be noted, is negative in nature; that is, the individual is told to avoid rather than to take up certain vocations.

Conversely, it might be remarked that there are certain vocations which are suited to handicapped people. Watch-repairing is one of these; a person may be humpbacked or lame and not be any the poorer, so long as he possesses a good degree of manual dexterity. Some industrial concerns now reserve a number of positions for persons who are handicapped—lame, deaf, blind, with poor vision, etc. The writer has seen one particular operation in a large factory which is always done by a man with a wooden leg. A heavy piece of iron might slip, and if it does, the carpenter rather than the doctor has to be summoned!

6. SEX. Sex should make little difference, but unfortunately this is not always the case. From a theoretical standpoint, it should make no difference who fills a position, provided he or she can do it effectively. But we know that most occupations are traditionally held by one or the other sex. Men do most of the crude manual-laboring work, are executives in large measure, and dominate the professions of law, medicine, and engineering. Almost without exception grade-school teachers are women, although in high school the numbers are about even, and in colleges the large majority are men. Stenographers and nurses have traditionally been women. There are about equal numbers of each sex acting as salesmen, as waiters, and as factory workers in semiskilled operations.

The main point about guidance in terms of sex is to be very cautious about advising a person to go into a vocation which tradi-

tionally belongs to the other sex. Some women are now entering law and medicine, but the proportions remain heavily in favor of the men. Any woman who does go into these or other professions is setting herself at a disadvantage at the outset; hence her interests and abilities should be such that permanence and success seem very certain before she is advised to follow her inclinations.

7. RACE. Race may be a potent factor. Discrimination may be unfair, as with sex, but one person has great difficulty going against tradition, no matter how good his aptitudes may be. In some vocations and in some cities a Jew, an Oriental, or a Negro is seriously handicapped. Prejudices vary from one part of the country to another, so no accurate generalization is possible.

8. AGE. Age makes a difference for some positions, although in general there is a fairly direct line of promotional sequence up which an able man may gradually rise. Ordinarily a superintendent, a high-school principal, a vocational counselor, or an occupant of many other positions bearing prestige and authority should be a middle-aged man. Certain types of salesmen, say in the sporting-goods line, would preferably be younger men. Further, there are some occupations into which it might be inadvisable for an older man to try to break. With industrial changes, individual readjustments are often necessary, but such changes must be effected advisedly. For example, as our mode of transportation changed about the beginning of this century, many carriage-makers were absorbed into the automobile industry, but some middle-aged men had difficulty in making this change.

9. EDUCATION. Some positions are not open to a person who has not completed high school or college. Conversely, one should not allow a good education to go to waste by entering a vocation with demands of a lower order than one's training would warrant. Specialized vocational training may be demanded for some positions, such as stenography or accounting, and one must obtain it before he can secure regular employment. In other cases, as in salesmanship or carpentry, industry itself takes care of this special training while one is actually working.

10. EXPERIENCE. Experience, either in the same or in a very similar task, or in another which leads up to the one under con

sideration, is often demanded. It is not always possible to obtain experience, and such a demand can easily establish a vicious circle. If a person cannot get a position because he has had no experience, he has no way to acquire that experience. Such an unreasonable demand usually has to be modified soon, however, since before long the supply of available workers who have had experience will have been exhausted. But however true this latter fact may be, it does not help the applicant at the present time.

11. SOCIAL FACTORS. Social factors both of the profession and of the applicant must be considered for a number of vocations. A certain degree of social poise and presence is required of the teacher, salesman, minister, hotel clerk, and others having social or executive demands. Personal appearance, both physical and sartorial, as well as manner of meeting people and carrying on conversation, is included in this category. On the other side, that of the young person, are the social possibilities or limitations involved in the type of work under consideration. Many persons prefer a white-collar position over one which involves wearing overalls and getting dirty, even if the former may pay much less. The potential service to society is a feature to be considered, although in all honesty it must be confessed that this usually appeals more to older counselors than to the young worker himself.

12. ECONOMIC ASPECTS. Success and happiness are not irretrievably bound up with financial return, but one should at least give the matter some attention. Inventors, teachers, social workers, and *ministers receive pay far smaller than their intellectual capacities* and length of training would seem to warrant, but persons entering these lines of endeavor are willing to make the necessary sacrifices in order to engage in the kind of work they truly enjoy. Many artists and musicians endure actual poverty to carry on their work. Although a farmer may handle little cash, he is practically assured of a home and enough to eat. Most of us will agree that pleasure in one's work and a decently comfortable living is far more important than more money without accompanying satisfaction.

In sizing up economic returns, one should think of the following points: what is the average income, as well as the top figure

possible; what is the rate of turnover; are there opportunities for extra earnings (overtime work, bonuses, writing, speeches); what is the age of starting and of retiring; is one expected to live in the more expensive part of the city and to indulge in expensive social activities? We find, for example, that while a few lawyers have truly prodigious incomes, the majority earn less than $5000 a year, and few under thirty make much more than office expenses. College teaching has many desirable features, but a quarter of professors earn less than $3000 yearly, are faced with very slow promotion, yet have social obligations equal to members of much more lucrative professions. Most ministers earn well under $2500; they certainly need to be imbued with the confidence of their convictions! The same characterizes teachers in public schools in all but the larger cities.

Lest we appear to be unduly pessimistic, we might point out that some occupations have good financial returns, considering abilities, training, and experience demanded. Dentists, in the period of 1920-1936, had median earnings of $3760, and a quarter of them earned better than $6000, yet their training is far less than that of doctors, lawyers, or professors, and perhaps about equal to that of high-school teachers, who earn less than half that amount. Salesmanship, being a matter more of personality than of training, shows very wide ranges of income.

13. OCCUPATIONAL DISTRIBUTIONS AND TRENDS. Until recently this point has not received much emphasis. But with changing society and with variations among cities and towns it becomes very important. One should not open up a store if he finds that there are so many in the locality that none is earning much. Rather he will look for a part of the city where there are few stores per thousand population. Similarly, a doctor would settle where there are few competitors, or would select a rapidly growing city or subdivision as yet claimed by few in his profession. We might mention two instances of overcrowding: too many wish to go into "business in general" without specific interests or training, and generally too many girls are desirous of teaching high-school English.

Also one must look toward the future. An occupation which today is good may be relatively poor a few years from now; and conversely one which today is in its infancy may be a major industry

by the time one has finished his general education and special training. This consideration will be discussed in greater detail in Chapter VI.

IV. Remedial Guidance [2]

A. Reading

The greatest difficulties are slowness of reading, misreading, and not deriving sufficient meaning and memory value from the material which has been read. Proper remedial treatment has been known to double both speed and comprehension of reading on the part of college students.

B. Spelling

Some people are distinctly poor in spelling, but practice and application of several well-known principles will correct the majority of such errors. By far the greatest majority of mistakes are visual-auditory confusions, i.e., the misspelled word may have the same pronunciation as the correct one.

C. Study Habits

Since this is discussed in some detail in a later chapter, we shall only point out that many students do poor work in high school or college, not from lack of ability or determination, but from failure to study regularly or to use their time effectively.

D. Mental Hygiene

Emotional and personality difficulties demand expert assistance. Regardless of the fact that college students are above average intellectually and educationally, they are not necessarily equally well adjusted emotionally and socially. So adjustment of these problems is an important phase of personnel work in higher education. This work is especially serious considering the fact that in the great majority of occupations personality characteristics are far more important determiners of success than is pure ability or competence in the occupation. While this may seem a cynical observation,

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[2] Since this third phase of guidance is very specialized and can only be undertaken by properly trained experts, we shall confine ourselves to pointing out some of the problems involved, with very brief comments on each.

present economic society does pay off more in terms of social relationships than in terms of pure professional competence.

E. Speech Disorders

The school psychologist should be able to cope with most speech deficiencies. In the great majority of cases such disorders have an emotional origin, so stammering must be considered as a symptom of something more basic. Physiological impairment, such as deformation of the mouth or throat, is extremely rare. Speech deficiency often is a symptom of some conflict and stammering is just the outlet. The outlet might as well have been nail-biting, facial tics, or some other sign of nervousness. One should examine the factors in the person's school, home, or social life to attempt to find the cause of the conflict. Forced change of handedness is well known as a frequent cause of stammering (30 per cent of stammerers studied at the University of Iowa had been forced to change their preferred hand) (*17*), but the crucial thing here seems to be the forcing, rather than the purely physiological angle.

While stammering is both the most common and most serious speech handicap, we must mention several other speech defects which often demand correction. Lisping, baby talk, a harsh and unpleasant voice, and pronounced sectional or foreign accent, all may handicap a person when he tries to get a job or in his social relationships.

F. Disciplinary Problems

Unpleasant to all concerned, disciplinary problems do occasionally arise in high school or college, and demand constructive treatment. While strict punishment, usually in the form of deprivation of some privilege, may be sometimes or often demanded, it should be administered only after thorough and sympathetic case study. Poor deportment, especially in the early grades, may be simply the result of superior intelligence; the lesson can be done in half the time required by others not so well endowed, so what's a healthy, imaginative boy going to do with his spare time? Inattention in class may not be willfulness; such judgment should only be made if one has made certain that the student is not suffering from

malnutrition, poor sight or hearing, emotionally upsetting conditions at home, etc. Surely you would not keep a high-school boy or girl an hour after school as punishment for inattention if you knew that his or her parents had quarreled and separated the night before.

G. Personality Improvement

Improvement of personality may be undertaken by a school psychologist as an aid in adjusting for future life. Actual manners, neglected at home, may be a subject for guidance. Also pointing out possible reasons for unpopularity, trying to cultivate greater confidence in an excessively shy person, controlling anger reactions; and otherwise building up neglected areas, will all be worth-while work if guidance is seen in the light we have advocated here: preparing the whole individual to take a better place socially and economically.

V. Summary: Analysis and Synthesis

As a concluding step in guidance we must analyze all our previous points and put them together in a constructive manner.

"A generic definition of all analytic techniques would characterize them as methods of objectifying and making communicable our judgments about the individual or the group. Under such a definition will fall not only tests and measuring instruments, but also all clinical data that throw light on the causes or conditions of behavior, including grades or other forms of *judgments of achievement and all other recorded impressions or observations* about the individual" (*20*, p. 103).

In other words, we must assemble all available data, in terms of intelligence scores, achievement-test results, personality tests, interest-test scores, measures of special aptitudes, school grades (both favorable and unfavorable), family situation, work experience, any special points pro or con (sex, race, color, religion, etc.), physique, expressed interests, observable personality traits, etc.

These data are then compared with the demands of the projected occupation. It has been remarked that knowledge of this latter phase of guidance is distinctly behind that of aptitude measurement. For a number of years, the Department of Labor has engaged

in a thorough occupational analysis, which is proving valuable both for guidance and placement purposes.

The interview must remain the focal point of the whole guidance program, since all tests and other objective data are brought together and combined with the less tangible segments of the individual's make-up into a completed picture of the student as a whole individual. Since many of the less objective points come out only slowly, several interviews may be necessary to build rapport and garner all crucial information. The ultimate conclusion may result only after several discussions with the counselor, or after a staff meeting of the counselor-in-charge and others who know the individual well.

We have pointed out several times that neither test data nor occupational analysis is complete as yet. But this does not suggest that guidance on a scientific basis is not possible. It is the conviction of many guidance experts that it is far better to use data which may not be completely full and accurate, than deliberately to discard available information. There are two principal reasons for this: (1) the more one knows about himself or about the counselee, the better; (2) if one discards test or other data on the grounds of incomplete accuracy, he will, unless he abandons guidance utterly, be reduced to such worthless devices as judging vocational suitability on the basis of color of skin or hair, size of jaw or shape of forehead, or intelligence and personality as estimated from a photograph or after a few minutes' interview.

What records, then, will be found profitable to use? Merely listing them, the more important are: name, date, address, and telephone number; family background as to education and occupation of parents and older brothers and sisters, and economic status of the family; the student's grades over the past several years; standing on tests of intelligence, specific aptitudes, educational achievement, personality and interests; jobs held, extracurricular activities; letters of recommendation; special personal problems; reasons for and against the vocational choice; and a summary of the advice and suggestions made by the counselor.

The final step of analysis and synthesis is usually completed by means of an interview, or several successive interviews. All data are secured, analyzed, and put together constructively in terms of these

facts plus whatever the expert counselor can add as he observes the boy or girl during the course of the interviews. It must be emphasized again, for fear we might have given the wrong impression in the last sentence, that the final decision is to be made by the individual himself. The counselor should only mention facts, size up pros and cons, mention assets and liabilities, hardships and advantages; and only use forceful persuasion in case it seems highly probable that a serious error in decision is about to be made.

In this interview, or between the first and second interviews, the counselor may seek the aid of other specialists or teachers who may know the student well. At the University of Minnesota, for example, a staff clinic meets once a week to attempt to make an accurate synthesis of dubious and complicated cases. Every thought, of course, is for the best interests of the student.

Finally, follow-up work is of the utmost importance. Since this is the duty of the school or college, and of the guidance worker, and not of the student, we shall mention it only briefly. Obviously the validity of any assistance given can only be checked up by studying the later success and happiness of those who have been given help, and comparing them if possible with a similar but unguided group. An example of such validation was mentioned earlier, where the Milwaukee Vocational School found that 78 per cent of plumbing apprentices whom they had trained were still working in that field a year later, but only 23 per cent of those who came from other sources had remained. Thus the school ascertained that their training program was highly satisfactory, and later candidates for training could be assured that the school gave an excellent course. Unfortunately, such follow-up work has been all too rare.

Following guidance, there are six possible consequences:

1. Advice may be taken, and better adjustment follows.
2. Advice may be taken, with no change.
3. Advice may be taken, and the student may be worse off.
4. Advice may not be taken, yet better adjustment follows.
5. Advice may not be taken, with no change.
6. Advice may not be taken, and the student may be worse off.

Naturally it would be ideal for the case of the counselor if conditions 1 and 6 occurred typically, and if cases 3 and 4 never arose.

Actually, guidance rarely harms an individual, and then usually one finds that the counselor has become overenthusiastic and has failed to dissuade a student from trying something beyond his intellectual or other aptitudes, or at variance with his personality and emotional make-up.

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CHAPTER III

INTELLIGENCE AND VOCATION[1]

I. Intelligence and Capability

Intelligence is one of the most important single factors in vocational success; if one has not the requisite ability he cannot succeed. It has been recognized for many years as contributing materially to scholastic achievement, but for one reason at least it is more important in earning one's living than in the academic situation. In school work one can make up for not being as quick as others by working more hours, since the average student can complete assignments in a small fraction of his available time. Those who cannot work so rapidly can spend a larger portion of the day on their lessons, sacrificing time spent on diversions and outside activities. Thus persistence can make up somewhat for lack of native ability. But it is difficult or impossible to do this in business. We are judged by our ability to do a certain quantity and quality of work in the customary eight-hour working day. If one does more work than the average he contributes more to the success of his firm than does the average or slow worker, and he will, accordingly, get ahead more rapidly.

Likewise, possession of more than a certain degree of intelligence would make it inadvisable for an individual to enter certain "blind-alley" occupations. Fortunately, intelligence seems to carry ambi-

[1] Since it is customary to study general psychology before reading applied psychology, we shall assume that the reader already is familiar with the important aspects of intelligence and personality; so we shall confine ourselves in this and the next chapter to brief introductions, just sufficient to create a background of common understanding.

tion with it, so we rarely have to discourage anyone from entering a vocation much below his ability. The familiar stories of Abraham Lincoln trudging many miles to borrow books may not be literally true, but the principle of high intelligence carrying with it intellectual curiosity and stimulating its possessor to vast efforts to satisfy it is correct enough.

II. Individual Differences

Laymen often seem to think that anyone can do about the same quantity and quality of work, provided he tries hard enough. Possibly the words and implications of the Declaration of Independence, which says that "all men are created equal," have had something to do with this belief, although its framers were actually thinking primarily of legal equality. If the words were changed to apply to psychological principles, they would be somewhat as follows: Men are born with widely different abilities and these manifest themselves increasingly throughout life.

This fallacy of potential equality may have been allowed to persist because of hesitancy on the part of school advisers to discourage parents in regard to ultimate possibilities of their offspring. Fundamental lack of ability is explained delicately as due to lack of effort, slight slowness in initial comprehension which will be made up soon, predicted intellectual spurt at the time of adolescence, the "slow-but-sure" superstition, and similar fallacious arguments.

Everyone recognizes that there are wide differences in ability to run, swim, play baseball, or golf. Yet individual differences are far greater in complex intellectual abilities than in motor capacities. While the best man can only run about twice as fast as the slowest and the expert golfer takes only a third fewer strokes than the dub, the man of high intelligence can solve in a few seconds a problem, say in mathematics, which would take another minutes or even hours, and which a third person might never be able to solve by his own unaided efforts.

III. The Nature of Intelligence

A. Definitions

No one knows exactly what intelligence *is*, except that it is undoubtedly some function of the nervous system. Definitions given by leading authorities in the field vary somewhat, but they revolve around half a dozen characteristics of behavior which distinguish the bright from the dull human. The intelligent person uses past experience effectively, is able to concentrate and keep his attention focused for longer periods of time, adjusts in a new or unaccustomed situation rapidly and with less confusion and with fewer false moves, shows variability and versatility of response (in contrast to stubborn persistence of inappropriate behavior), is able to see distant relationships, can carry on abstract thinking, has a greater capacity of inhibition or delay, and is capable of exercising self-criticism. Since these important points are presented so succinctly, it is suggested that the reader reread and reverse them to see the same behavior items stated in terms of the stupid person.

B. Can Intelligence Be Changed?

The purpose of intelligence tests is to measure *native* ability. The first intelligence test, devised by Binet in 1905, aimed to distinguish among failing school pupils those who could from those who could not succeed. Naturally enough, the question soon arose as to whether one's test score could be changed, whether a pupil who was poor at one age might or could become average or even superior at another, and whether special training or tutoring could make one brighter. Thus, the problem of heredity versus environment is of immense practical as well as theoretical value in this field. The answer seems to be still in favor of innateness and constancy of intelligence. While several investigations from the University of Iowa have undeniably demonstrated that environmental influences are much more important than had been previously assumed, it appears that their chief point was that *very early* environment (even before one or two years of age) had not been considered. This argument is apart from our case, since by the time the child enters school, much less attains college level, his intelligence is pretty well set, so guidance can assume nothing more than relatively stable apti-

tude. Even the strongest environmentalists admit that at birth one's general level or range is to some extent determined; a favorable environment will allow him to rise to the top of it, an unfavorable environment reduces him toward the lower limits of the range. The old proverb, "You can't make a silk purse out of a sow's ear," still holds.

Also, from a practical standpoint, it must be pointed out that the great majority of individuals are reared by their own parents, so receive similar heredity and environment. Therefore, any theory must be tempered with the facts of society as it exists. This is of the utmost importance to guidance. Any form of guidance must depend upon constancy of human characteristics, since it directs the best use of one's present aptitudes now toward future vocational demands, and if either the individual or the vocation changes materially, such guidance, no matter how good it may have been at the time, will be vitiated.

C. Generality of Intelligence

Of great importance in terms of vocational choice is whether intelligence is a general function or whether it is composed of a large number of separate abilities. Present opinion, backed up by an immense amount of statistical research, is that intellectual abilities are highly intercorrelated. In school subjects or other intellectual tasks one should be roughly on a level. It is true that people do better at one task than another, but the primary causes are not different levels of aptitude; rather they are accounted for by differences in motivation, interest, previous training, etc. One *should* achieve about the same general level in all courses; there *should* be only a small amount of variation among grades earned in languages, literature, sciences, and history.

D. Accuracy of Intelligence Tests

The accuracy of intelligence tests is generally conceded at present to be very satisfactory. There are no serious objections against them (at least by those who have really studied them); and no material innovations have been introduced for more than ten years. This does not say that efforts have not been made to improve them,

but these have been principally along the lines of statistical betterment, eliminating weak subtests and poor items, ease of administration and interpretation, and deriving more complete norms (22).

IV. The Measurement of Intelligence

We would like to emphasize that *the only accurate way of ascertaining a person's intellectual status is by means of an actual test which gives a numerical score and is interpreted by comparison with previously obtained scores on a wide population.* The standard score customarily used is the Intelligence Quotient, ordinarily shortened to the well-known first letters, IQ. It is a device to express the relationship between the chronological age of the individual and his mental development. The formula for computing it is:

$$\text{Intelligence Quotient} = \frac{\text{Mental Age}}{\text{Chronological Age}}$$

Both ages are in terms of years and months, the chronological since birth, and the mental from comparison of the child with the standards for his own and other ages. If an 8-year-old has a mental age of 8, he is exactly average. His mental age would be 8 regardless of whether he were 8, 10, 15, or only 5 chronologically, as long as he has a test performance of 8.

Interpretation with adults is often made in terms other than IQ points, since there is some uncertainty as to mental growth after 15 or 16 years of age. Ability is nearly constant from that age to perhaps 55, so when persons beyond high-school age are tested and the IQ is computed, 16 is usually left as the denominator.

Scores do not need to be reported in terms of IQ points; they may be given in gross score units as well. It makes no difference whether we set an IQ of 105 as minimum for a clothing salesman, or demand that he make a score of 130 points on the American Council Psychological Examination, provided that both scores represent the same potential ability. The chief advantage of using a derived score such as the IQ is that a certain figure represents the same standard regardless of the test administered. But if we are to use the same test for all new employees, a distribution of raw scores obtained from that test is absolutely satisfactory.

Understanding of the interpretation of various IQ scores will aid in later practical educational and vocational guidance through intelligence. No absolute differentiation is possible, since the distribution of scores is continuous, but a few conventions have been arrived at in terms of words used to express different degrees of intelligence. The following table compares these levels:

TABLE 2. IQ Levels (*24*)

IQ	*Classification*	*Approximate Percentage*
0-24	Idiot	*
25-49	Imbecile	3
50-69	Moron	
70-89	Dull normal	20
90-109	Average	55
110-139	Superior	20
140+	Genius	0.1

Although the terms moron, imbecile, and idiot are often used in private life as interchangeable terms of abuse, in scientific circles there is the clear-cut differentiation indicated in the table. The idiot is incapable of even caring for himself or learning language. The imbecile is also profoundly defective but is slightly higher in the scale, can perform a few routine duties, feed himself, and use a few words. However, earning a living is almost always beyond his possibilities. Although the moron may earn his living in crude routine work, he should have guidance and advice about spending his money and should not undertake the responsibilities of raising a family.

One study, however, does show certain occupations which can be undertaken by women with intelligence levels in the range considered feeble-minded. Note in Table 3 that these figures are the *minimum*, before generalizing too broadly about potentialities of this group. Since there are comparatively few defectives and since vocational possibilities are so distinctly limited, we may dismiss these classes with this brief consideration.

Those occupations listed as within the reach of "dull normals" include many more. These include many of the individuals who drive trucks, are farm laborers, sell routine articles in lower-class

TABLE 3. Minimum Intelligence Levels for Women's Occupations (9)

Occupation	*Minimum Mental Age*
Packing	5 years
Miscellaneous light factory work	6 years
Assembling, errand girl, examining, pasting	7 years
Cutting, folding, garment-machine operating	8 years
Hand sewing, press operating, filing, stock girl	9 years
Clerical work	10 years
Selling	11 years

stores, and act as unskilled file clerks and typists in offices. They are capable of graduating from grade school, but do not profit from trying the more abstract subjects in high school.

The "average" group comprises the large mass of white-collar workers, expert file clerks and secretaries, mechanicians in types of work where extreme skill and some planning are necessary, salesmen of more detailed types of articles, and small store owners.

The "superior" class includes almost all the higher occupations, although one could not be near its lower limit and engage in law, medicine, writing, inventing, or college teaching. The "genius" class is by definition a point so high on the distribution curve that only one person in a thousand attains it.

V. EDUCATIONAL GUIDANCE

We discussed several phases of educational guidance in Chapter II, but there are some special points which should be emphasized here. Let us emphasize again that educational and vocational guidance are bound up with each other. If a boy of mediocre ability wishes to become a doctor, and one advises him not to attempt college work, he is actually telling him in the same words that he can't expect to become a doctor.

The moron, or one who is barely above the critical level of 70, is capable of achieving only a few grades at the best, so educational efforts should be directed at his acquiring the rudiments of reading, writing, and arithmetic—skills which are virtually indispensable tools in daily life. But more abstract subjects, such as history

or literature, will neither be appreciated nor used subsequently.

Assuming average academic standards, an IQ of 85-90 should be necessary to complete grade school, nearly 100 to finish high school and around 110 to do satisfactory college work. Standards are known to vary from state to state, from city to city, and from public to private schools, so these levels must be considered only approximate. A study of around 250 colleges, private, public, and denominational, all over the country showed that in the lowest the student body averaged barely 100, while the top few colleges had averages of at least 120 IQ.

Intelligence scores are useful in choosing the particular sequence of courses at a given educational level. High schools generally have three major divisions: college preparatory, general, and vocational. The general course is for those of medium aptitude who do not expect to go on to college. It is planned to have cultural value, but with some of the more abstract subjects of the college-preparatory sequence omitted. Roughly, we might suggest that the top third of high-school pupils be urged to go on to college, the middle third take the general course, and the lower third some direct vocational-training program. Guidance of course is tempered by such factors, mentioned in more detail in the first chapter, as family financial situation, ambitions, occupational trends, physique, sex, race, etc.

In college one usually has a choice of at least a dozen fields. While everyone capable of doing college work is recognized as being fairly bright, at the same time certain curricula demand better than average college aptitude. Examples of these are engineering, law, and medicine. Not quite so demanding of a high degree of verbal aptitude are nursing, home economics, physical education, agriculture, pharmacy. These are all worthy vocations, and may have demands which the honor student, say in philosophy, might not be able to meet, so we are not suggesting any hierarchy of occupations. Just now we are confining our discussion to intelligence alone.

That intelligence plays a part in the *selection* of curriculum, as well as success in it, as shown by figures in Table 4. This presents the median percentiles of freshmen choosing the various courses open to them.

TABLE 4. Median Percentile Ranks in Intelligence of Freshmen in Various Schools of the University of Wisconsin (12)

Course	*Rank*	*Median Percentile*
Mining engineering	1	80.0
Humanities	2	77.5
Chemical engineering	3	68.8
Electrical engineering	4	65.6
Chemistry course	5	64.2
Mechanical engineering	6	63.7
Bachelor of arts	7	62.7
Civil engineering	8	60.0
Pre-medical	9	54.1
Chemistry-commerce	10	52.5
Nursing	11	51.3
Music	12	50.6
Art education	13	50.5
Home economics	14	50.0
Physical education	15	48.8
Bachelor of philosophy	16	46.7
Agriculture	17	37.9
Pharmacy	18	31.0

One sees that all branches of engineering are well toward the top, as is the technical chemistry course. The course in humanities, which is purely cultural rather than practical in purpose, attracts a very high class of students. Courses of shorter duration or those which have more general programs, such as agriculture, pharmacy, physical education, and home economics, show lower average scores. Comparisons between two branches of the same course are interesting. Candidates for the Ph.B. degree are allowed to omit languages, which some students wish to avoid, and the difference between this course and the scores made by students working for the B.A. degree is sixteen percentile points. The chemistry-commerce course shows a score nearly twelve points below the standard chemistry course, which latter demands more intensive and more abstract work.

Dentistry and veterinary medicine are not represented among the schools at the University of Wisconsin, but scores reported at

Ohio State University place students in these curricula well below those in pharmacy, which is at the foot of the Wisconsin list.

These scores are *not* final, since they were made by freshmen entering the various courses, and some of the students will not be successful in completing them. There is also a great degree of overlapping; many bright students elect courses for which the average is rather low, and vice versa. But as a matter of fact the averages probably indicate with good accuracy the comparative difficulties of the various curricula. To obviate possible misunderstanding, we must urge again that we are not suggesting that any course or any occupation is easy or undesirable. We are listing only the ratings in terms of abstract intelligence, and are not mentioning personality, training, physique, appearance, and other important attributes for success.

Further, all are students on a college level, so few are below the average of the population at large.

It would be advisable to direct the superior student away from those courses which are low on the list, since the higher ones offer him opportunity to make fuller use of his possibilities. On the other hand, there is always opportunity for a desirable man in any occupation, and it might be more advantageous for a person to be an outstanding farm expert than below-average doctor.

VI. Vocational Guidance

Vocational guidance through intelligence will be discussed under four headings: general comparison between occupations; cases where intelligence scores and occupational success agree; cases where intelligence does not predict success; and the degree of intelligence desirable for undertaking various vocations.

A. Comparisons Between Occupations

A tremendous amount of valuable material on the relation between intelligence and vocation has been provided by the famous Army Alpha test in World War I, and by the Army General Classification Test in World War II. The former represented the first really large-scale testing program ever attempted, and the latter is still larger, although a complete analysis has not yet been published at the time of this writing. Since such large proportions of young

men are in the service at such times, results can be taken as representative of the population at large. The scores on Army Alpha were surprisingly low; the mental-age average, found by comparing results on this test with scores obtained from a sample group on the Binet age scale, was 14.09. The gross score averaged 79, the

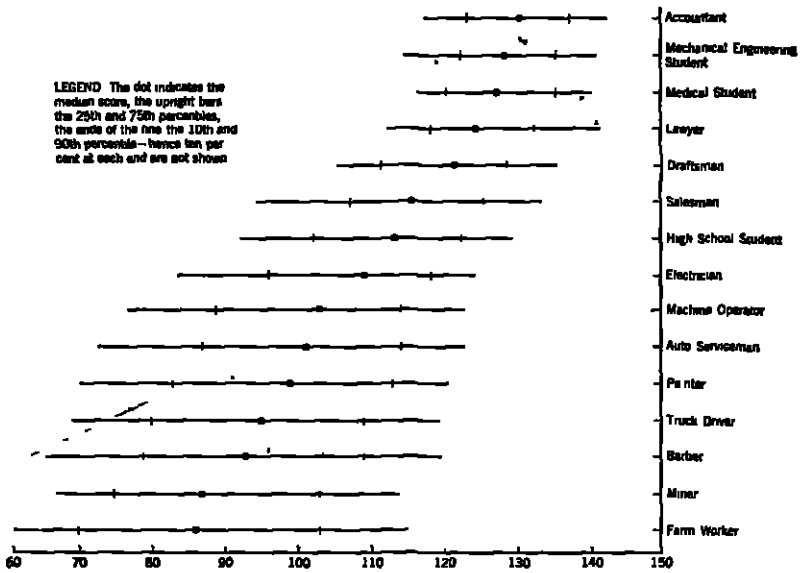

FIG. 2. Gross Scores of Fifteen Sample Occupational and Student Groups on Army General Classification Test.

maximum possible being 212. In several colleges of good standard it was later found that Alpha scores of less than 115 would not permit success, and for those between 115 and 130 unusual effort was necessary to secure passing grades. Averages of freshman classes were around 140-150; almost twice the score obtained by the average of the country. And remember that the figure of 79 quoted for the Army was only the average; half the scores were below that figure.

In Fig. 2 are presented norms on the Army-General Classification Test for fifteen selected groups, some student and some occupational, chosen from published figures on 227 such groups (29). For purposes of illustration we chose some earning high, medium, and low scores.

Even the extremes of the bars as presented omit the top and bottom 10 per cent of the obtained distributions. For complete presentation we portray medians, quartiles, and the 10-90 percentile ranges. An important fact one must not forget is that all men in a single vocation cannot be thought of as having identical aptitude scores. If the whole range were included, most groups would show about a 2:1 ratio from top to bottom. Some farm workers, at the bottom of this particular chart, are above, in native aptitude, the lowest 10 per cent of accountants. Those in the so-called higher occupations are not only more highly talented, but usually are more fortunate in having been able to secure greater and more specialized educations. Further extended comment on this chart is unnecessary; the reader may make his own comparisons and interpretations.

B. Where Intelligence and Success Are Correlated

Kornhauser (*13*) reports a study of intelligence scores of several groups of factory employees who were being trained to become minor executives. They were sectioned on the basis of learning performance to allow each group to learn at its best rate. Mental alertness tests disclosed an almost perfect separation between the groups. The few cases of overlapping were almost invariably traced to persons of higher intelligence who were not trying. But it had taken months of experience to make these divisions, which a test could have made with over 90 per cent accuracy within an hour.

Comparisons were made among executives, minor executives, and clerks (including sales clerks). Only a small percentage of clerks came up to the level of executives. Yoakum (*27*) says: "It is clear, for example, that very few of the clerks and sales people have the ability that will enable them to compete with the higher executives even after years of experience and training." The executives who left employ because of incompetence all tested in the lowest quarter of their groups.

That various positions nominally calling for the same duties are far from alike was demonstrated in a study on various types of salesmen. Table 5 shows the numbers of each group, their means, and the middle 50 per cent of the range. This demonstrates the necessity of carefully analyzing the work to be done. Actually, it

has been shown in several studies that a high degree of intelligence is not of the utmost consequence in determining success in selling. Personality traits are much better predicters. Intelligence sufficient to understand the article one is selling is all that is necessary; hence the more technical and complex the article, or the greater the variety of goods carried, the higher the intelligence score demanded.

TABLE 5. Intelligence Scores of Salesmen (*15*)

	Type of Work	*Number*	*Average*	*Range*
1.	Low grade; make change on one-priced article	52	51	36-70
2.	Wholesale order takers	73	89	59-121
3.	Insurance salesmen	326	112	82-138
4.	Selling technical article requiring training	66	139	124-155

Another study ascertained the relationship between intelligence and rank status of girls working in department stores. There was correspondence both in class of position held and in wage scale for groups classed in terms of IQ from 80 to 113. Practically all the lower intelligence scores were made by those earning but twelve dollars a week, while no one with an IQ over 110 received this minimum salary. The proportion of those earning this minimum steadily decreased as one went up the intelligence scale (*1*).

A report on Army Alpha (*5*) gives an example from a clerical occupation:

"One hundred and six employees of the Civil Service Commission, who had been selected with unusual care and retained for several months and in many cases for several years, were given group examination Alpha. Since unsatisfactory employees would not have been retained, it is to be presumed that the group is a competent one. The civil service ratings, assigned in percentages on the basis of examination at the time of entry into the civil service, range from 70 to 94. The median Alpha score for this group is 150, with extremes of 199 and 70. For the entire group the correlation of Alpha score with civil service rating is +.48. For a group of 73 who are classified as clerks, the correlation is +.53."

In Czechoslovakia (*14*) intelligence scores correlated with ratings of public-service employees only to the extent of +.21, but it was

pointed out that some of the discrepancies were due to lack of formal education or to personality shortcomings.

A number of other cases in which ability and intelligence are highly correlated are reported by Kornhauser. Table 6 shows a good example of agreement, the correlation being +.82. Similar ratings of women office workers in another company produced a correlation of +.76, which for all practical purposes is of the same predictive and diagnostic value.[2]

TABLE 6. Comparison of Mental-Alertness Scores of Women Office Workers with Ratings of Their Abilities by Supervisors (*13*)

Employee	*Test Score*	*Rank by Test*	*Ranking in Ability by Supervisors*
A	49.0	1	1
B	48.0	2	6
C	45.0	3	3
D	44.5	4	4
E	42.5	5	5
F	40.0	6	2
G	38.5	7	7
H	38.5	7	8
I	36.5	9	11
J	32.5	10	14
K	32.0	11	13
L	30.0	12	9
M	28.0	13	12
N	24.0	14	10

Junior accountants and bookkeepers achieved success roughly proportional to their intelligence scores. Terman Group tests were administered to disabled veterans undertaking training in these vocations (*19*). It had been predicted that 125 would constitute a desirable critical score, that being about the college minimum. Since many scored under that figure, cases lower down were studied for possibilities. The averages of successful and unsuccessful candidates are listed in Table 7. Of those who had been promoted

[2] For interpretation of various correlation coefficients, the reader is referred to any standard text on psychological statistics or tests and measurements.

TABLE 7. Average Mental-Test Scores of Successful and Unsuccessful Accountants and Bookkeepers

Group	*Number*	*Average*
Whole group	264	129
Successful	170	142
Discontinued	94	112

or were being considered for promotion, practically all did have scores over 125. Wages showed similar differences. It is interesting to note that analysis of those men who succeeded in spite of low total scores on the test disclosed that all of them had high arithmetic scores. In this way the presence of a special ability compensated in this specialized task for lack of higher general development.

Stenographers hoping for positions of more than a purely routine nature should be able to exercise judgment and take on some responsibility, and to find people of this type, a general ability test was devised by Shellow (*20*). The test was of the usual nature, except that the actual items chosen were such as are met in the performance of duties, such as filling in missing words, paragraphing, spelling, grammar, and analogies. For validation three groups of stenographers of responsible, average, and purely routine positions were tested. Their efficiency ratings took into consideration not only their actual performance, but also the type of work done and problems handled; so actually general value to the firm was the criterion. The intelligence results correlated +.48 with this criterion. The intelligence and trade tests correlated with each other only +.12 which is desirable from a technical point of view, since it shows that separate abilities are being measured.

In a utility company (gas and electric) intelligence tests were found to measure not only abstract aptitudes, but ability to adjust to the job. As seen from Table 8 by far the greatest share of outstanding employees in twelve occupations within this large utility came from those testing superior, and the majority of the problem cases, meaning failures and inability to adjust to the job, were from those in the group with an IQ below 90.

TABLE 8. Relation Between Intelligence and Occupational Success in a Utility (*26*)

Test Rating	*Number*	*Outstanding*	*Problem Cases*
Superior, 110+ IQ	154	41%	11%
Average, 90-109 IQ	312	30%	19%
Below average, 89 IQ	207	13%	35%

Nurses in training will have slightly better success if they have higher intelligence scores (*28*). High-school senior girls who signified a desire to become nurses averaged at the 45th percentile of intelligence, while those in active training fell at the 58th percentile, suggesting some selection at the outset. Rating scores for ten nurses from each of the high, medium, and low groups on the intelligence tests were compared. The high group was generally higher in these efficiency ratings, and a fact which stood out especially was that they had fewer weak points. Those higher in the test did better in both the theoretical and the practical work in training, although the superiority was more marked on the theoretical side. These nurses averaged seven percentile points higher than a group of teachers in training.

Nurses were also studied in Czechoslovakia, and correlations of +.72 were reported between IQ's and examination grades of nurses who had been admitted without intelligence tests. All but one nurse with IQ below 95 failed; the average IQ of those who failed was 87 and of those who passed 102 (*23*).

In a study on normal-school students, intelligence appears somewhat less determinative of success. Correlation with practice-teaching marks was only +.11, but a mark on a subject like this might easily indicate effort and carefulness more than strict ability. A comprehensive test of knowledge of materials to be taught in elementary subjects correlated +.53 with intelligence. It was also shown that 63 per cent of the failures occurred below the median score, and that 42 per cent fell within the lowest quartile of juniors (*16*).

C. Where Intelligence Does Not Predict Success

In some cases intelligence score and vocational success are not at all correlated. These instances, however, do not overthrow the value of ascertaining the individual's aptitudes. Among the principal reasons for lack of agreement are: Qualities other than intelligence are of more importance—personality traits, physique, sex, or motor skills. One should not assume that verbal or abstract intelligence is the only important aptitude for success in the entire range of occupations. Special training may be demanded rather than native ability. In some instances a narrow range of abilities complicates the statistical computations. Finally, a certain critical score (see Section IX of this chapter) may be all that is necessary.

Bingham and Davis (*8*) report a correlation of practically zero between business success and intelligence. Tests were given to a group of 102 businessmen of various ages at a conference. About two thirds of the group furnished a sort of business autobiography which permitted a rating of degree of success. Two of the three lowest on the test were presidents of their concerns. What is probably the chief reason for this lack of correlation is that such a *narrow range* of mental abilities was tested that a few points difference would be much more than made up by compensating personality traits. The investigators comment that *all* scores were well above the average of the general population. No one could succeed as a business executive without a fairly high minimum status. Another possible reason might be that many of those in higher positions were older men, and it has been found that test scores tend to decrease somewhat with age, perhaps more due to loss of speed, a characteristic of youth important on such a test, and not due to decline of executive or planning ability.

In some cases the nature of the occupation itself may permit success through factors other than mental alertness. Very startling results were found in a study of the Detroit Police Department. Actually the officers were of lower intelligence than the patrolmen.

There is no doubt as to the accuracy of the results, as another investigation (*11*) in Los Angeles disclosed the same general rank-orders. Stenographers, secretaries, and clerks scored higher than any of the regular force. Detective lieutenants and lieutenants did

score higher than patrolmen, but again the sergeants were lower, averaging 89 in comparison with 95 for the patrolmen. It would appear that advancement in the police department comes from reasons other than alertness, perhaps willingness to follow routine, regularity, bravery, etc. The duties appear to be such that men of good intelligence find them uncongenial, since there is an inverse ratio between length of service and intelligence.

TABLE 9. Average Mental-Test Scores of Several Ranks in the Detroit Police Force (25)

Rank	*Number*	*Score*
Lieutenant	17	57.8
Sergeant	34	54.7
Patrolman	307	71.4

The same situation often appears with professional athletes. Earnings seem high, especially if the individual is not especially endowed otherwise. Then around the age of 30 the athlete will find himself slowing up, with no permanent vocational proficiencies, ten years behind others in getting a start, and (especially in the case of boxers) perhaps suffering from irreparable injury. The writer has consistently discouraged college seniors from such a career, except in cases where the ability was of undeniably top caliber, and then I have strongly urged that off-seasons should be spent in training for a lifetime career.

Efficiency ratings of laundry employees were compared with their intelligence scores, and practically no agreement appeared. Those of higher scores were slightly better than the rest, but in the rest of the range there were no differences. This suggests a fact which appears in many lower-scale occupations. In mechanical and routine operations possession of a certain degree of intelligence (critical score) will permit of success, but any beyond that figure is unessential. The same thing was found to be true with metal workers (*18*), even in types of work demanding some adaptability in handling different products. Intelligence score made little difference in determining success.

Correlations of practically zero were obtained between Alpha and both output and accuracy with graphotype operators (*27*). New tests were developed which measured more closely the abili-

ties needed to operate the machines, and the correlation now became +.55. A similar test was devised for comptometer operators which enabled a selection of employees with 85 per cent accuracy; none who failed the test passed the course, and only a few who passed the test failed to succeed in the course. These latter probably failed because of lack of effort or other personality deficiencies. In shop work some of inferior intelligence did better than those of higher general ability.

Since a number of studies have shown good agreement between intelligence and occupational success, and others show no relation at all, what are we to conclude? The answer is found by inspecting the types of occupations dealt with. It may be seen that with a single exception the cases of zero or insignificant relationship arose in occupations which do not demand the highest abstract ability. Since intelligence tests admittedly measure ability at "verbal gymnastics," we really should not expect them to predict success in occupations whose major demands are motor or social rather than intellectual. It is, of course, obvious that no occupational duties can be discharged by one totally lacking in intelligence, but in many vocations this particular ability is of less total importance than are certain other aptitudes. In general, *correlations between intelligence and success increase with complexity of duties.*

From a guidance standpoint, we must realize that the layman's idea of compensation is false. People who are below par mentally are not correspondingly superior in strength or dexterity. This fact is perhaps unfortunate, because it would be ideal if each of us happened to be talented along intellectual or social or manual dexterity lines. If it were true, guidance would be simplified; an individual could be steered into one of these three major groups of vocations. But the truth is that subnormal people as a whole have poorer motor coordination than average or superior people, and usually their personalities are not quite so desirable.

D. Intelligence Desirable for Entering Various Vocations

How closely may we use intelligence scores in guiding an individual into his vocation? We have seen that scores for various occupations overlap greatly, which fact suggests a major point. We

cannot pick out a single occupation and advise the individual to enter that. But we can place him within a certain group. A person with an IQ of about 95 might on this aptitude alone do equally well as a telephone lineman, an automobile mechanic, store salesman, file clerk, or in any one of dozens of other vocations which demand the same general degree of ability. He has too much ability to be a common laborer, but not enough to become an accountant or a newspaper writer. On professional levels a doctor might have been a lawyer, a minister, an engineer, or a chemist, had his interests lain along those directions.

The median scores from Army Alpha may probably be taken as fair indicators of the intelligence necessary to enter the occupations classified there. We can be reasonably sure that intelligence scores of individuals who have remained in an occupation for a number of years are fairly close to the desirable figure for that vocation. The fact that wide variations do exist means that some individuals are too high or too low to be in that particular group and will probably disappear; it is not an indication that it makes little difference what one's intelligence is. Our constructive programs should be to eliminate both ends, instead of letting time and experience accomplish this—often painfully.

Before norms are established for any position, we should analyze its demands very carefully. The writer was told by a tester in a public-service company in one of our large cities that an IQ of about 85 was requisite to drive a city bus, although the mechanical operation of driving could be done by one of even less ability. But such an individual would be unable to remember the names of the streets at which he was to stop, and so would not render complete service. Yet one would not at first think of this factor as an important function of the job. Another factor was seen in the figures quoted on salesmen of different types. These showed that cases cannot be lumped and norms given as to the intelligence necessary to become a salesman. Norms must specify what type of salesman as well as the fact that the position demands selling.

Critical scores for several office occupations are quoted in Table 10. Since this test is not converted into IQ points or mental ages, we are unable to interpret the data beyond comparing among

themselves the occupations listed here. By way of explanation, the critical score is a point below which chances of success are so slender that it is considered inadvisable to employ anyone having such a score. The reason women are below men in certain positions is that many bright men are willing to start low in the hope of promotion, while women often take these places for temporary employment or are satisfied to remain there.

TABLE 10. Mental-Alertness Test Standards for Various Occupational Groups (*13*)

Occupation	*Number of Individuals*	*Average Score*	*Critical Score*
Men			
Stenographers	26	59	40
Bookkeepers	25	50	35
Draftsmen	58	49	32
Clerks	245	47	33
Office boys and messengers	135	33	15
Women			
Stenographers	70	45	33
Typists	55	44	30
Clerks	235	36	25

Data were ascertained (*6*) on the mental ages necessary to carry on a number of lower-grade manual-labor activities. A mental age of seven permits one to do rough painting or simple shoe repairing or to be a blacksmith's assistant (note the words rough, simple, and assistant), to plow, and to do simple carpentry. With an additional year of mentality, one can pitch and load hay, cut hair and shave, and paint outside and interior flat work. A nine-year mentality suffices to paint toys, but a ten-year status is necessary to paint signs, a more complex and particular task. General garden work, similarly, can be done with mental age of eight, but the more particular types demand two years' higher development, and to be a greenhouse attendant or to take care of a lawn one must be at the eleven- or twelve-year level.

A study showing the vocational possibilities of girls with less than average intelligence has already been partially discussed earlier in this chapter (*9*). Girls from seven to eleven years mental

age have been taught to run electric-power sewing machines, although they required a period of training longer than for one of normal aptitudes. That what appear to be slight differences in types of work can make considerable difference in intellectual demands is seen by the fact that hand sewing on garments may be done by girls of ten-year mentality, whereas the next grade of work, sewing on labels, demands more speed, and only those of at least twelve-year mentality survive.

By way of summary, we suggest in Table 11 recommended IQ levels for undertaking work of various types. These will be of assistance both to the student and to the counselor in helping the high-school or college student select the level he should aim for.

TABLE 11. Advised List of IQ's for Various Occupations

Group	*IQ*
A. Highest professions, scholars, inventors, research specialists, statisticians	120+
B. Public-school teachers, doctors, lawyers, bankers, large-scale businessmen	110-120
C. Small-scale businessmen, secretaries, "white-collar" workers, bookkeepers, nurses, gym or music teachers, most sellers, minor executives	90-110
D. Mechanics below the highly skilled level, bus drivers, policemen, plumbers, mechanics, hairdressers, telephone operators, clerks in country stores or handling simple articles, barbers, farmers	80-90
E. Semi-skilled work demanding little planning or versatility, painting, military service	70-80
F. Routine and crude manual labor. Many tramps and casual workers who drift from one job to another belong in this group. Lumbermen, sailors, cobblers, miners	60-70
G. Either no vocational competence, or the simplest and most routine, such as ironing handkerchiefs or mowing lawns	Below 60

E. Aptitude Measurement in the Military Services

While it is still too early for complete results from testing in World War II, a very widespread program was conducted by the Army, Marines, and Navy, as well as by the air forces under each of these branches. The Navy (2) had three main problems: (1)

who should be accepted into its forces; (2) how the Navy personnel could be most effectively used; and (3) how training programs could be rendered most effective. As far as intelligence alone was concerned, the General Classification Test had sections on: sentence completion (selecting from five choices the correct term with which to complete an unfinished sentence); opposites (selecting from five the term which is most nearly the exact opposite of the term supplied); and analogies (a series of incomplete analogies, choosing the correct alternative to complete the analogy). Their basic battery also contained tests of reading, arithmetical reasoning, mechanical aptitude, mechanical knowledge, clerical aptitude, spelling, and a radio code test.

The Army test (3) contained three parts, as did the Navy's, but there were some differences. This test had: simple arithmetic, on the theory that one cannot adjust gun sights without some ability along this line; vocabulary, to understand orders; and cube analysis (counting piles, in pictures, to estimate how many there were). The Army's principal purpose was simply this: to ascertain if a man was capable of learning, how much, and how quickly. More specifically, they were interested in discovering quickly who could not learn military activities, and who were fitted to be accepted as candidates for officer training. In addition, an individual test (most intelligence tests, one has undoubtedly observed, are given to groups) was designed for illiterates, foreign-born with scanty command of English, problem cases who might be discharged, and clinical cases.

VII. Intelligence and Turnover

Each occupation has its own intelligence demands, and those in it usually sooner or later hit a fair level of agreement. At the lower end, elimination occurs automatically; the worker is so unfit that he cannot keep pace. At the upper end of the scale, a man will be neither interested nor stimulated by the work. A study was made of turnover among factory employees engaged in five different levels of work as shown in Table 12. The intelligence scores of the workers when they were first employed were compared with those of the original groups who were still employed thirty months later. Elimination had occurred at both

ends of the scale, in a manner like that just sketched. The correspondence between intelligence and grade of work increased, and the groups became much more clearly differentiated than at first. It will be noticed that the averages for the lower types of task decreased, indicating that those of higher intelligence were dropping out, while in the more complex tasks the scores increased, showing that lower mentalities were inadequate for the job demands. This same tendency has been observed in other investigations.

TABLE 12. Intelligence Averages at Times of Employment and After Thirty Months (7).

Grade of Work	*Original Score*	*Later Score*
A (low)	85	68
B	78	80
C	105	95
D	104	111
E (high)	119	125

Since one of the most important functions of the personnel department is to select new employees in such a way that they have a high probability of remaining on the job as long as possible, it should eliminate at the beginning those cases which are very likely to drop out early. One cannot escape turnover among individuals who are not correctly placed in positions appropriate for their abilities, so it is better to forestall it by using our known scientific methods and thus save both industry and the individual, rather than letting it take care of itself with cost and waste to both.

VIII. PSEUDO-SCIENTIFIC MEANS OF ESTIMATING INTELLIGENCE

A. Intelligence from Photographs

Frequently surmises are made as to a person's probable intelligence by looking at his face or inspecting a photograph submitted along with his application for a position. Are such estimates reliable? Can tests be dispensed with by a man who is experienced in sizing up others?

Even if we were willing to concede some degree of accuracy to such an estimate in a personal interview, a picture often fails to do

a person justice because he has to pose and may feel rather stiff and awkward, with the result that the camera records a grimace, an unnatural expression, or a transition between two expressions.

Several studies have been made on the reliability of estimating intelligence from photographs. A number of pictures of people are given to various raters who are asked to arrange them in what they think is the order of intelligence, from high to low. The results have consistently been absolutely worthless, as far as predictive ability is concerned. In one test, experts on intelligence testing and graduate students in psychology were no better able to judge than were several stenographers who had had no training at all in this field (*17*). Bright children were just as likely as not to be rated dull because they happened to have a serious, gloomy, or frowning expression; while a moron with a cheerful smile might be given a high rating. In another study (*10*) personnel managers and social workers were asked to estimate intelligence levels from photographs, and their correlations ranged from $-.06$ to $+.21$. In both studies, the averages of the correlations between actual and estimated scores were practically zero. This means that one might as well shuffle the cards at random and hand the pack back to the examiner as representing his rank-order judgment from top to bottom.

B. Photographs and Applications

The photograph is commonly requested when one applies for a position, so it is obvious that it must be assumed to have value in furnishing information about the applicant's potentialities. However, the last three paragraphs have shown that intelligence cannot be so estimated. It has also been demonstrated that neither personality traits nor vocational type (i.e., typical doctor, minister, or salesman) can be thus sized up. So the value of the picture must be recognized as being restricted to detecting a few characteristics which might be undesirable for a position, such as race, color, facial disfiguration, premature baldness, or similar physical characteristics which are admittedly unrelated to true abilities, but which may influence and possibly antagonize people encountered in working in positions with definite social demands.

C. Intelligence from Interview

Are we any better off if we avoid the faults of a still photograph and judge a person while talking with him, observing his features and expressions during the course of the conversation? This means of formulating judgment is probably better than from a picture; still, it is highly uncertain. An experienced psychologist, who may have given thousands of tests, would not venture to rate a person without a lengthy close acquaintance, and even then he is subject to many mistakes. The writer is frequently surprised at scores made by some individuals on tests, even after a year's contact in class or laboratory, which situations should furnish ample evidence of their behavior and potentialities.

One investigator (*21*) succeeded in building up an interview technique of estimating intelligence which gave him a correlation of +.82 with the scores made on an actual test. The test was carefully disguised to appear nothing more than the usual interview in which the individual expects to tell about his past experience, his qualifications, and his special abilities. In spite of this remarkable accuracy, the author was not especially enthusiastic about its possibilities for general use. It requires a very expert interviewer to apply the test successfully, and it would require a number of thoroughly standardized interviews to test adequately the whole range of intelligence. Moreover, valuable time is consumed; a routine clerk can administer a standard mental test, and the high-priced interviewer should be left free to study other complex features which cannot be discovered from tests.

IX. Limitations of Intelligence Tests

So far we have discussed chiefly the favorable aspects of intelligence in respect to vocational choice. But intelligence is not all-sufficient. Let us therefore look over a few points which it does not cover.

A. Critical Score

A critical score must be determined before test results can be used practically. By "critical score" we mean that score below which no employee, or few at best, makes the grade. An example

of a critical score in the physical realm is 32° Fahrenheit as the freezing point of water. Time alone will enable one to set the exact score desirable. Employees are tested after they are accepted and permanent records are kept. After a few months, or even a year or two, these records are reinspected in terms of the subsequent histories of the individuals concerned. One may find, for example, that all persons who scored below 85 proved to be unsatisfactory, that those above that score were fairly certain to be successful, and that most of those over 100 had earned promotion. Therefore, in the future anyone with a score below 85 would not be accepted, while one scoring over 100 would be eagerly received and kept in mind as promotional material. Actually, one's procedure in establishing a critical score will not start quite so far in the dark as might be gathered from these remarks. Available data offer a close index of the intelligence demanded for success in many vocations, and setting an approximate score for a new occupation can be closely arrived at. Such a score will, of course, be subject to later revision if found not entirely accurate.

B. Demands Other Than Intelligence

Many of the duties of a position may require traits other than intelligence. In one study an intelligence test worked very effectively in selecting clerks for an office force, but failed utterly when used in the process of employing mill workers, many of whom were foreign or illiterate. Given a certain minimum intelligence, speed and reliability are probably greater assets than high ability itself. The studies of police forces showed instances of intelligence actually working against advancement.

C. Personality

Although a large item in success, personality is practically unrelated to intelligence. Both are necessary in most positions, and a person slightly lower in intellectual qualities, but possessed of a distinctly pleasing personality, may progress satisfactorily. Likes and dislikes contribute, as well as the more social aspects of personality. These two phases of an individual's equipment will be discussed more at length in the next two chapters, so are only briefly mentioned here for the sake of completeness of perspective

D. Individual Discrepancies

In terms of correspondence between predicted success or failure and actual quality of work, individual discrepancies will in some instances occur. If we accept an IQ of 115 as the minimum for successfully completing medical school and discharging professional duties, we can be certain that a boy with an IQ of just 100 can never succeed. But we might be able to find a few practicing physicians with scores somewhat below 115 and others over 120 who failed in medical school. Suppose a boy with a score of 110 was very anxious to enter the medical profession; should he be discouraged? The matter may be considered in the light of probability, rather than of certainty one way or the other. With scores of 100 there would be virtually no chance in a hundred, but with 110 we might say that he has ten chances in one hundred of being a successful practitioner, but certainly no chance of becoming eminent. The ultimate decision must be left to the individual and his family as to whether they will take such a long chance with the risk it involves. But the counselor should do his best to discourage anyone who has a score below the accepted *minimum*, which itself is naturally below the *average* for a given vocation. In fact, anyone entering a vocation with an intelligence below the average of that vocation is setting himself the task of competing with persons beyond his ability. However, occasionally such a case does get through. The mental test is then subjected to ridicule as being faulty, and the fact that it predicted a dozen instances correctly is ignored in the face of the single negative instance.

People in educational circles sometimes become too enthusiastic about possession of either a high degree of schooling or a high intelligence score. They may wonder why a "self-made" man is able to get so far. In addition to undoubtedly possessing the necessary social and individual personality traits, it is likely that such individuals would also score high on a test which measured purely native aptitude. Certainly no one would dispute the innate high ability possessed by such people as Rockefeller, Ford, Chrysler—all men with only a few grades of formal schooling.

E. Possession of Special Ability

Another failure of intelligence tests is in the case of a man who achieves success somewhat beyond the expectation based upon his intelligence status, because of the possession of some exceptional ability not dependent on intelligence, such as musical or artistic genius, or an extreme degree of manual dexterity.

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CHAPTER IV

PERSONALITY AND VOCATION

I. The Importance of Personality

"I called at an office to renew an old acquaintance a short time ago. While waiting in the reception room I noticed that the secretary greeted each visitor with marked lack of interest. She made a very poor contact for the firm, in contrast with the comfortable furnishings of the room. I mentioned this to my friend. After some thought he told me he could recall that since this new secretary had been on duty in the reception room, he had noticed each caller seemed to be mildly antagonistic.

"He tried the experiment of placing a general clerk who liked meeting people in the reception room and has written me that the change in the attitude of visitors is so noticeable that he is 'almost inclined to believe in this psychology stuff.'"

This quotation (9) shows another factor which contributes to success and failure—personality. This aspect of the make-up of the individual is not a matter of intellect or aptitude, but rather of social adjustment. It is not just a matter of ability that one person likes figures and machines, while another is happiest and most successful when dealing with people.

Actual statistical demonstration of this can be seen in Table 24 in Chapter VI, where we list causes for discharge and reasons for failure to receive promotions. We see that shortcomings in either general or specific abilities are usually far less important than is lack of possession of certain personality characteristics, especially those of predominantly social character.

So it appears safe to say that personality is much more a determiner of success than is pure intelligence in all but perhaps a

few of the most highly intellectual occupations, and actually most of these latter demand getting along with people as well as producing work of high quality. We have already discussed critical scores on tests, and now we may point out that the great majority of vocations demand possession of *aptitudes* only at or above a certain critical level, and that beyond this figure the degree of *eminence or mediocrity will depend upon the personality*. For instance, the average college graduate has enough ability to teach high school, and the possibility of his rising to a more responsible position depends upon the social and other phases of personality. The best scholar does not necessarily make the best teacher, nor is the excellent teacher always one who makes original contributions to the advancement of knowledge.

II. What Is Personality?

As with intelligence, we shall present a brief summary, to arrive at a common ground of mutual understanding. Two leading definitions are: "Characteristic modes of behavior" and "The sum total of a person's behavior traits." The first describes personality in terms of behavior which is displayed consistently in largely similar situations. The second really suggests that personality is no less than the whole of ourselves. What you do, what you can do, what you stand for, how you affect other people, and so on, all go to make up your personality.

Therefore, there are several important characteristics of personality. (1) It is a social phenomenon. The individual neither grows up nor lives as an adult in a vacuum. When we describe him as being honest, cheerful, or reliable, we are speaking in terms of his behavior toward others. (2) Also, since personality is social, we must infer it chiefly from behavior, since behavior, and not what the person may profess or feel within himself, is what the world sees in him. For instance, promptness or lateness is measured by the clock, not by excuses. (3) Personality is a stimulus as well as a response. Since it is social, it appears as it affects other people as well as in terms of what one himself does.

(4) Personality traits have many dimensions, in contrast say to intelligence, which although a complex function does exist from

low to high on a single continuum in terms of one trait (verbal abstract aptitude). There are dozens or even hundreds of personality traits, and many of them cannot be said to be either desirable or undesirable. Only in terms of the situation can they be evaluated; a trait desirable in a private bodyguard might be undesirable in a minister or a social worker. Likewise, a trait which might be enjoyable in a golfing friend might be undesirable in a business associate; or in a woman, out of place in a man. Thus, the common expression "a lot of personality" becomes utterly meaningless. Some of these complexities are pointed out so that the reader will not be unduly critical about personality tests because they cannot as yet be claimed to be perfectly accurate measuring instruments. Personality does not exist in isolation in certain quantities, but only in connection with a certain trait, such as being more or less sociably inclined. Rather it must be evaluated in terms of the situation, social or occupational.

(5) Personality traits tend to be highly specific, in contrast to the broader nature of intelligence. Intelligence, we remember, is general; in other words, one's aptitude carries over about equally from one type of performance to another. But personality shows just the opposite tendency; not only is there little correlation between one trait and another, but even within one trait inconsistency often appears. Research has shown to be false the old unproven assumption that the boy who steals cookies will grow up to be an embezzler or a murderer. Children who will cheat at games may leave money scrupulously alone; boys who are in reform school for stealing may be utterly honest in a classroom examination. Similarly, radicalism is not a general trait. In a study of the attitudes of several hundred college students toward nine controversial issues, namely, law, communism, patriotism, God, birth control, evolution, constitution, capital punishment, and war, it was found that not a single student was radical and not a single student was conservative on all nine. There were only slight positive intercorrelations, but not one large enough to permit one to hazard more than the vaguest estimate from one attitude to the other.

(6) Personality and abilities theoretically should not be correlated, but actually a person's abilities do constitute an aspect of

his personality. If we speak of personality as a social trait, then intelligence and other aptitudes must enter, since the brighter and more accomplished person will be a more entertaining companion, and will be possessed of more skills. The more accomplishments one has—intellectual, informational, tennis, swimming, dancing, playing the piano, or cards—the richer his personality will be. Thus, intelligence and special abilities must be considered as part of the total personality, as well as the social traits that may occur to us first.

(7) It seems to be human nature to want to classify people into personality types—the scholar type, the typical salesman, "he looks like a lawyer," "gloomy as an undertaker." Such attempts at typology are not confined to laymen; one scientist divided men in terms of their outlooks into six groups: theoretic (scholar), economic (money motive), aesthetic, social, political (executive or governing), and religious. Recently an anthropologist has claimed that the "roly-poly type" makes the best husband because he is always cheerful and dependable, while the tall gaunt man is more inclined to be moody and uncooperative.

There are several objections against such analysis into types. (a) Types represent extremes, which occur only in the minority of cases. We can name one or two friends who fit any classification, but with most we must admit that they don't fit clearly into one or another class. (b) Most people tend toward an average or middle ground, as we can see in Section IV of this chapter in the case of ambiverts. (c) No person is entirely consistent. A fairly pronounced extravert may nevertheless exhibit several introvertive tendencies, such as love of music. (d) Types tend to break down on analysis. At first sight a group, say a convention of insurance men or a crowd of college football fans, might appear to be composed of largely similar individuals, but if one has an opportunity to become acquainted with a number of them, he will see individual differences appearing to such an extent that he will wonder how he ever thought of them as a single "type." Any types or patterns that we may use are only convenient starting points, as we shall see in several of our broad personality divisions in this chapter, in interests in the next chapter, and in vocational aptitudes in Chapter VI.

III. Methods of Estimating Personality

Personality may be studied in a number of ways. Some involve actual personality tests, others personal observations and case studies.

A. *Observation* is obviously the most thorough approach, since it involves continual contact with one who sees the ratee in crucial situations. It has the unavoidable limitation of no one being able to observe another in every possible situation, so rating on this basis is restricted to those who have had an opportunity to observe the person in a wide variety of situations.

B. *Rating* is more objective, but must be restricted to those who have seen the person in situations similar to those in the occupation he intends to enter.

C. *Interviews* are desirable for employment, to ascertain certain facts, but the interviewer must recognize that many important items cannot be discovered from a few minutes' talk. The interviewee may be excited and fail to do himself justice, or he may be so much on his good behavior that he appears better than he really is. Also such long-time traits as promptness, sustained ambition, or honesty, cannot possibly be ascertained.

D. *Case study*, consisting in fitting together information gathered over a period of time, is valuable in diagnosing problem cases in education or industry, but is virtually unusable in the employment situation or in handling college problems unless one has an unusually well-informed and intelligent informer.

E. *Personality tests* are the best means of estimating personality, in spite of the fact that they involve the subject's answering questions about himself. But they are definite, can cover the ground completely, and since they approach the same trait from several angles the final score is probably very representative of the person's true personality status. Several typical questions are:

Do you daydream frequently?	Yes	No	?
Are you troubled with shyness?	Yes	No	?
Do you like to bear responsibilities alone?	Yes	No	?

Do you make new friends easily?	Yes	No	?
Do you worry too long over humiliating experiences?	Yes	No	?
Do you enjoy speaking in public?	Yes	No	?
Are athletics more enjoyable than reading?	Yes	No	?

Obviously answers to such questions depend on your being consistent, honest, and accurate. You must not only desire to answer truthfully, but you must do your utmost to evaluate yourself honestly and to inhibit the natural tendency to gloss over weak points. Remember that the test is being used for your own ultimate benefit, and falsifying or exaggerating is no more worth while than is cheating at solitaire. Probably much more prevalent than deliberate falsifying is unconscious misevaluation. One may tend to choose the alternative which will do him the most credit, on such questions as to whether he prefers dance music or symphony, reading love or detective stories rather than Shakespeare, or whether one becomes seriously confused in an embarrassing situation rather than being able to recover his poise quickly.

The same questions may be slightly reworded in the third person, for use by a rater, say in a letter of recommendation or a supervisor's rating to assist consideration for promotion. Instead of asking "Are you troubled with shyness?" we can word it "Is he unduly shy?" Such outside rating may in some ways be more honest and accurate than is self-rating, but on the other hand no outsider knows as much about you as you do yourself.

Now let us examine several tests which measure various phases of the personality, and see their applications to vocational and other forms of guidance.

IV. Introversion-Extroversion

The introvert-extrovert division is probably the best known of all personality descriptions, and at the present time has had the broadest use in vocational placement. Literally, these terms mean that one's thoughts turn inward or outward respectively. The introvert typically thinks in terms of abstractions and subjective im-

pressions, while the extrovert thinks in terms of concrete objects, activities, and people. Before we go any farther, we cannot emphasize too strongly that the terms truly apply only to those who fall at one extreme or the other. No one is completely extroverted in every aspect of behavior, nor is one likely to be completely extroverted in even a single trait. Most of us show apparent contradictions; we may be fond of sports and dancing, but also enjoy good literature or opera. And in terms of a single trait we may not be as extremely sociable as the stereotype of the back-slapping promoter, nor as withdrawing as the opposite stereotype of the hermit or the laboratory researcher. Finally, each of us changes from time to time. Sometimes we may be glad to see our friends, while at others because of physical or emotional upset we prefer to be alone. Sometimes we enjoy a symphony or an opera; at other times we feel more like listening to a band or a hillbilly orchestra.

So introversion or extroversion is a matter of definition. Not everyone falls into one of the two classes, even granted the qualifications and inconsistencies we have just mentioned. It is customary to say that the extreme 25 per cent at each end fall into these two classes. This leaves 50 per cent in the middle of the distribution; we call these *ambiverts*, because their thoughts turn either way, and not pronouncedly in one direction or the other. One can verify these classifications in his own way by listing a dozen good friends, and it will be immediately apparent that only a few can be placed at either extreme.

In Table 13 we list several outstanding introvert and extrovert characteristics, so that one may obtain a more comprehensive idea of these personality dichotomies.

As stated above, no person is at either extreme end of the scale on all characteristics. There are apparent inconsistencies; one who is well toward the introvert end of the scale may be fond of athletics, and a fairly pronounced extrovert may thoroughly enjoy reading. Nor do more than a very few occupations demand extreme introversion or extreme extroversion. An introvert might not make a successful auctioneer, and a back-slapping extrovert would probably be too impatient to be a successful research man in

TABLE 13. Sample Introvert and Extrovert Characteristics

Introvert	*Extrovert*
Interested in ideas	Prefers working with others
Solves own problems, even if troublesome	Seeks advice
More likely to hurt others' feelings	More careful in this
Shy and ill at ease with strangers	Makes friends easily
Talks little about self	May be boastful
Worries more; moody	Comparatively carefree
Blushes easily; self-conscious	Less self-conscious
Suspicious	Trusts readily
Radical	Conservative and conforming
Careful and conscientious; persistent	Gives up more easily
Detailed	Less careful
Meticulous	Less attention to personal appearance

physics or astronomy. The point to consider is how far the individual is toward one end of the scale or the other, or whether he is about midway and so classifiable as an ambivert.

Results from testing people in several occupations within one organization are given in Fig. 3. Executives and foremen are seen to be well toward the extrovert end of the scale, since their work demands handling people. Without this trait they would rarely be successful. In this instance, the one foreman who stands at the 60 per cent mark toward the introvert end was rated as "not so hot." On the other hand, persons whose duties demand scrupulous attention to details, such as "adjusters on complicated small machines" and "final inspectors on complicated small machines," nearly all stand far toward the introvert end. Office clerks are fairly well scattered over the entire range except for the extreme extrovert end, and about two thirds of the group are in the upper end of the scale toward introversion. The small sampling of bench mechanics has a median in the ambivert range, with no case near either extreme.

In promotion we have another important use of the employee's introvert-extrovert score. It does not take much thought to realize

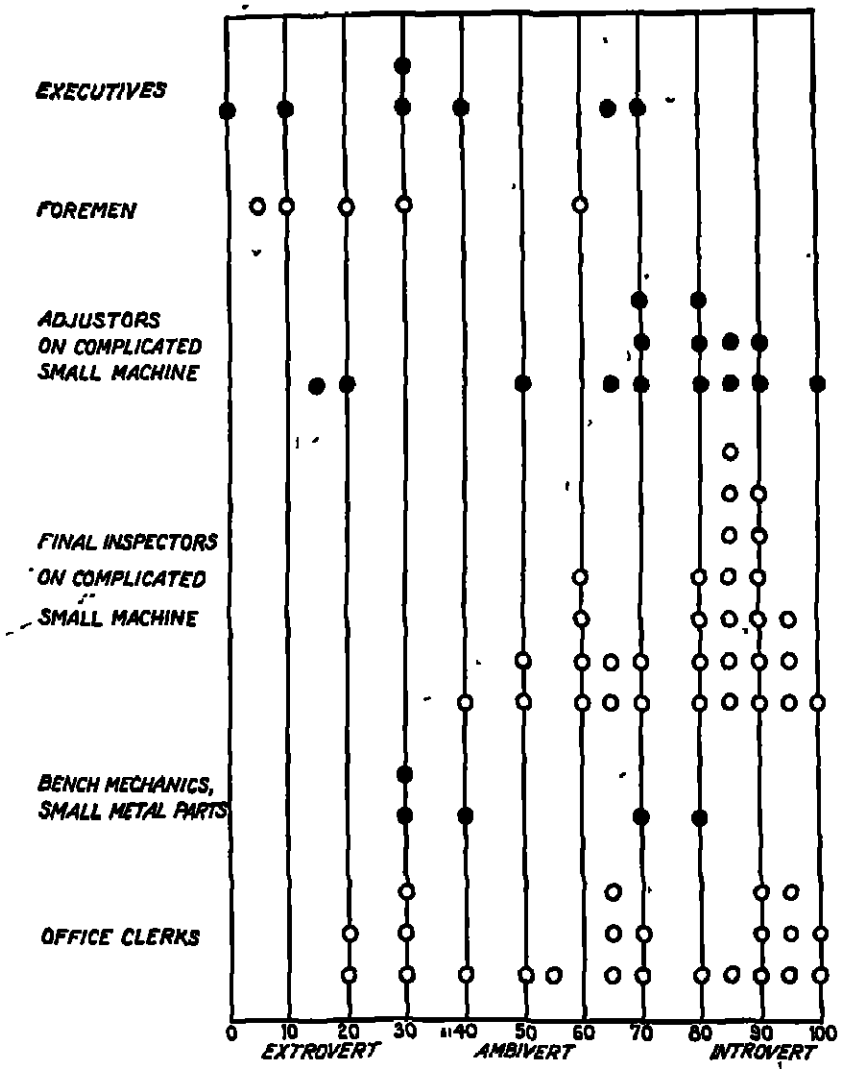

FIG. 8. Distribution of Introvert-Extrovert Scores for Those in Several Occupations.

that because a worker happens to be the best producer in his department he *is not also best equipped to be supervisor in case that* opening arises. The best mechanic is not necessarily the best foreman, just as the best player on the team is not always the best choice for captain. In fact, in some instances the reverse may be true. The best inspector has attained his position by virtue of introvertive qualities, and these in turn will usually disqualify him for consideration for promotion up the executive ladder. Technical knowledge and skill alone will not suffice. But if this same inspector has the requisite aptitudes, he can rise along technical lines and make important contributions to his firm. In a store, personality traits may determine whether a good sales clerk will be promoted up the supervisory or merchandising lines, or perhaps be transferred to some other lines, such as advertising or finance.

Many vocations have duties which demand activities agreeable to both classes of personality, rather than exclusively to one or the other. A personnel manager, for example, has many duties involving handling people, and yet research work is an essential part in advancing efficient methods within the organization. A general physician has to be somewhat of a scholar, but will not be eminently successful unless he also has the social qualities of sympathy and ability to get along with people who are sick and in trouble. The minister would have to have the same general qualifications. A specialist or surgeon could be farther toward the introvert end of the scale, since he meets people under more restricted conditions than the general practitioner.

V. Dominance

When two people are together, or when a larger group meets, one individual will usually take the leading or dominant role. This factor appears to be a general characteristic, and not limited to one type of situation.

Allport (*1*) has devised a test in an effort to measure the degree of one's ascendance (or dominance) and submission. Several typical items are reproduced in Table 14.

TABLE 14. Sample Ascendance-Submission and Dominance Items

Ascendant	*Submissive*
Tries to meet important people	Is timid about doing so
Acts in accordance with own desires	Yields to desires of others
Places self in position of advantage	Does not seek such position if it would make him conspicuous
Resists even trivial violation of rights	Does not object, even if he resents it inwardly
Haggles over prices	Avoids disputes
Opposes others' ideas	Conciliates or suffers in silence

Samples of two items on the test are given below:

8. Some one tries to push ahead of you in line. You have been waiting for some time and can't wait much longer. Suppose the intruder is the same sex as yourself, do you usually
   remonstrate with the intruder .....
   "look daggers" at the intruder or make clearly audible comments to your neighbor .....
   decide not to wait, and go away .....
   do nothing .....

13. When you are served a tough steak, a piece of unripe melon, or any other inferior dish at a high-class restaurant, do you complain about it to the waiter?
   occasionally .....
   seldom .....
   never .....

A few items and answers from the Bernreuter Personality Inventory (3) which give the individual positive dominance ratings follow:

Does it make you uncomfortable to be "different" or unconventional?	No
Are you easily discouraged when the opinions of others differ from your own?	*No*
Are you troubled with shyness?	No

A number of possible applications of scores on such tests have been suggested (1). The submissive individual might not do well in occupations which demand public speaking, contact with many

people, supervision, and executive ability. But a woman would not be handicapped in librarianship, nursing, secretarial or clerical work, editorial work, domestic science, dentistry, costume designing or millinery, pharmacy, teaching, statistics, research, and literary or artistic activities. Dominant or ascendant scores would equip one for salesmanship, social work, reportorial work, management of clubs, tearooms, or stores, law, medicine, personnel, soliciting, executive and administrative work.

Men with rather submissive tendencies should go into college teaching, architecture, art, farming, bookkeeping, banking, dentistry, editing or writing, music, secretaryship, mechanics, etc. Dominant men would enjoy an advantage in salesmanship, executive work, factory management, law, politics, organizing, and kindred occupations. Allport especially emphasizes selecting salesmen, foremen, and executives from ascendants. All such recommendations assume, of course, that the individual has proper qualifications in other directions.

A shortened form, for quick administration, was employed on executives in public offices and on meter readers, and it was found that the better executives were ascendant, while the better meter readers were neutral on this scale but toward the introvert end in that dimension of personality.

In this same short form the highest positive, or dominant, scores of ten groups tested were made by managers of chain variety stores, having 6 to 40 employees working under them. All who left the employ of the company within the next year had negative (i.e., somewhat submissive) scores. Fairly high positive scores were made by supervisors of commercial or office concerns, whereas 26 shop foremen averaged slightly negative. Although being a shop foreman might sound like a robust occupation, it is suggested that the skill and experience acquired in working one's way up may be more important than dominance.

Salesmen scored higher on the Bernreuter dominance scale than did clerical workers, but not by any vast difference. Within this group of store salesmen and saleswomen there was little relationship between magnitude of dominance score and sales success. There is a further suggestion that outside salesmen, such as insurance representatives and those who contact potential customers

in their homes, need a good deal more aggressiveness to succeed than does the salesman in the store where the customer usually approaches him.

From 77 department-store salesmen and saleswomen, nine of each were selected by the personnel manager and department heads as being the best. All salesmen had relatively high dominance scores, and the better ones had figures somewhat above this average, especially the women (*6*). The correlations between ratings and test scores were +.16 for men, and +.31 for women. The author then made a revised test, including just those items which showed a difference between salesmen and people at large, and this scale now showed a greater discrimination between the average of salesmen and the superior ones. When a group of poor salesmen was added and compared with the efficient group, there was real *differentiation*—neither with men nor women was there a case of a poor sales clerk scoring as high in dominance as the lowest score on the part of a superior one. It must be pointed out that the author in a certain sense played into his own hands, since he adapted his new test items to a known group and then stated that he had found agreement. A final step, to insure complete validation, must involve trying the technique on an unknown group or on newly hired salesmen, and then seeing whether the same items differentiated among them with equal accuracy.

Leaders in extracurricular activities in a men's and in a women's college clearly exceeded the average of students in dominance and in extroversion, although there were no appreciable differences in either self-sufficiency or sociability.

VI. Neurotic Tendencies

There are a number of tests which attempt to measure neurotic tendencies, defined as having excessive worries, being oversensitive, inclined to be moody, having inferiority feelings, and being overly concerned by criticism. A number of sample questions, each to be answered yes or no, are listed in Table 15 below, both to show the nature of the tests and the symptoms we class as neurotic. These have more diagnostic value for mental-hygiene purposes than for vocational guidance or for employment of new workers. However,

the maladjusted employee may cause disturbance in a department or may himself fail to do acceptable work for reasons other than his ability.

TABLE 15. Typical Neurotic-Symptom Questions (*10*)

As a child did you like to play alone?
Do you usually control your temper?
Do you get stage fright?
Do you have difficulty in starting conversation with a stranger?
Are you careful not to say things to hurt people's feelings?
Are your feelings easily hurt?
Do a great many things frighten you?
Can you stand kidding?
Have your friends ever turned against you?
Are you bothered much by blushing?
Do you daydream frequently?
Can you stand the sight of blood?
Are you systematic in caring for your personal property?

An article entitled "What Makes a Good Cashier?" points out, from a survey of girls in a large city department store, that cashiers have duties of a nature which is routine, yet rapid and responsible. Mistakes are costly, both in terms of money, service rendered, and customer good will:

Personality: Good attitude toward the work is essential. Cashiers suffering from serious mental conflicts or complexes are likely to make errors and be slow in handling their transactions, so do not hire the so-called "nervous types," those with maladjustments, wrong mental attitudes, or seriously faulty ways of meeting their problems. Avoid those who daydream often, especially if their reveries are of a pessimistic nature.

Home conditions: Since day-dreaming leads to errors, do not hire the girl who has serious home problems. Financial difficulties may make her a better worker, but serious illness or domestic troubles will distract her (*5*).

Certain other types of work fall into the same general class. Where absolute concentration is necessary to insure speed and accuracy, one cannot have serious outside worries or tendency to daydream. Accountants, bank tellers, chauffeurs, streetcar motormen, waiters, and machine operators would fall into this class.

Fortunately, the majority of these cases of nervousness, etc., are

temporary and may be cured, so most of these individuals need not be permanently disqualified from obtaining positions of this nature, if they desire to enter these vocations. In many other tasks minor conflicts would not in the least militate against success.

Anderson (2) cites the case of a cashier who had serious home worries, got to brooding about them, and suffered "shortages" very frequently. Worrying about these errors made matters progressively worse, and discrepancies became more and more frequent. But when transferred to a selling position, she did an excellent job. A cynic has observed that the retail salesman is not handicapped by neurotic tendencies, since he can do his brooding between customers! But the cashier, accountant, or bus driver must maintain continual concentration.

It has often been said in jest that medical students experience the symptoms of each disease in turn as they study them, and one study actually showed that such tendencies do exist. In one group of more than one hundred students 19 per cent were found to be neurotic, and of these, 25 per cent were markedly neurotic. These proportions were no greater than for undergraduate students at large, but must be considered more serious when one considers the subject matter they are studying. Referring to the table at the beginning of this section, you undoubtedly noticed that feeling squeamish at the sight of blood is a neurotic symptom. Not being able to overcome this symptom would retard medical study and certainly medical success after setting up private practice. The writer knew one doctor who brooded so much when a patient died, even if the disease had been incurable, that he eventually had to give up medicine and opened up an automobile salesroom. Think of the waste of time, effort, and money to obtain this professional training!

Slight tendencies toward psychoneurosis were magnified in airplane pilots, as one might readily understand, naturally resulting in increased hazard to oneself and others, and ultimate incapability of continuing flying.

Several of these investigations suggest the desirability, amounting almost to necessity, of studying by test or interview applicants for many types of work both for their own sakes and for the sake of effectiveness and safety of fellow employees.

VII. Social Intelligence

Most occupations demand at least a certain amount of social contact, and a person should be able to associate with others gracefully and without creating offense or arousing antagonism, or he will not be much of a success regardless of his other aptitudes. He must know how to deal with superiors and subordinates as well as with associates. Further, he must not only be able to take care of a situation when it arises, but should plan ahead to guide conversation and action into desired channels. Lack of social grace sometimes causes failure in the lifework of an individual who has had a remarkably brilliant intellectual career, and makes some executives very difficult to get along with, causing many quits among employees.

F. A. Moss and his collaborators have devised a test of social intelligence (*11*) which includes six types of situations of value in dealing with other people. These are:

1. Remembering names and faces. Study of photographs with names underneath; after a lapse of time one attempts to associate the names with the proper faces from a large number of pictures.
2. Identifying emotions from facial expressions.
3. Identifying emotions from printed quotations; somewhat similar to interpretation from conversation.
4. Recognition and solution of a situation in which there is no absolutely correct form of conduct, but where one form of behavior makes one less conspicuous or unpleasant.
5. Knowledge and observation of human behavior, as to which tactics are best in dealing with people.
6. Breadth of knowledge, both social and general, on the basis that the more one knows the more of a social asset he will be.

This test represents an interesting attempt to measure a capacity which is of undoubted importance, although the practical value of the test is still in doubt. The shortcoming is probably more in the situation itself than in the test. The ability to behave gracefully does not consist in stopping to consider possibilities, but in acting immediately and practically without thought, just as one places his hands in the correct position to catch a ball without going through elaborate calculations. This is confirmed in practical situations by

the blunders made thoughtlessly by persons of the *nouveau riche* type who have tried to acquire social grace with the aid of a book of etiquette, a tailor, and a butler. Yet the same individual might be able to answer test questions correctly.

Social-intelligence scores correlate rather highly (perhaps too highly) with general intelligence, figures running around +.40 to +.50, which is as high as single subtests, such as arithmetic or vocabulary, correlate with the total intelligence score. Often individuals of high intelligence status also score very high on the social test, yet their behavior is at times far from commendable.

TABLE 16. Norms on Social-Intelligence Test

Group	*Median Score*
Executives	117
College graduates	113
Teachers	112
Upper-class college	111
High-grade secretaries	111
Salesmen	107
Engineering employees, draftsmen, etc.	105
College freshmen	101
Clerks and stenographers	95
Lower-grade office workers	84
High-school students	81
Nurses	78
Policemen	74
Sales clerks in department stores	73
Lower-grade industrial workers	65

Table 16 lists norms quoted by Moss for various groups. This order is seen to be in close agreement with figures from Army Alpha and other intelligence tests, with very few exceptions. These could easily be explained on the basis of social information being only one part of general ability, and the fact that maturity probably plays a greater part here than in measures of purely abstract ability. There would likely be as many shifts from the order of general intelligence if we were to test these same groups in respect to mathematical ability alone.

Moss comments that the college students who scored highest in

the test were those who had engaged in many extracurricular activities. But as with salesmen we wonder whether social aptitude produced the activity success, or whether social participation produced the higher scores. Possibly this ability is somewhat more acquired than abstract intelligence; or it might be taken to show that those who possess social aptitude tended to seek others' society.

At present social aptitudes are best determined by interview or by recommendations from previous associates, but they should be considered at any rate, however they are ascertained.

VIII. Personality Inventories with Multiple Interpretations

Several personality tests have cleverly utilized the fact that many questions reveal more than one phase of the personality. Thus the individual seeking guidance or employment can fill in the test blank once and it can then be scored several times for as many dimensions of personality as are desired. One outstanding example is the Strong Vocational Interest Blank, in which one answers 400 questions as to his likes and dislikes, and which can then be scored in turn for any one or more of about three dozen occupations for men or nearly twenty for women, by comparing one's preferences with those of persons engaged in the occupation. This test is described in detail in Chapter V.

Another, the Bernreuter Personality Inventory, is composed of 125 items, and the individual is scored for six traits: neuroticism, self-sufficiency, introversion, dominance, self-confidence, and sociability (3). As an example of the way this multiple scoring works, Item Number 5 carries the following weights for whichever of the three choices one may encircle, for the six traits for which the test is standardized:

Item 5. Can you stand criticism without feeling hurt?

	Yes	*No*	*?*
Neurotic	−6	5	2
Self-sufficient	3	−3	−1
Introversion	−3	3	−1
Dominance	3	−2	−2
Self-confidence	−4	7	1
Sociability	1	0	−1

Thus we see that inability to stand ridicule gives one 5 points toward the neurotic end, and 7 points toward feeling acutely self-conscious and inferior.[1] Answering "Yes" to these same questions contributes toward a score indicating balance and adjustment.

Another test which has had some industrial application is the Humm-Wadsworth Temperament Scale. This test originated from a psychiatric classification of personality into these seven clinical

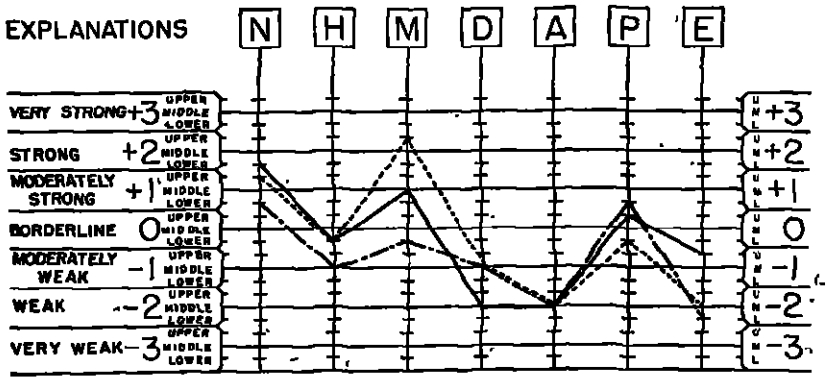

FIG. 4. Personality Profiles for Foremen and Salesmen. (Courtesy *Personnel Journal*.)

states: normal, hysteroid, manic, depressive, autistic, paranoid, and epileptoid. (If the reader does not happen to be familiar with some of these terms, it is suggested that he consult a standard text on psychiatry or abnormal psychology.) The Humm-Wadsworth test is designed for industrial use, originally being devised for selecting new employees in a gas and electric company. Naturally in an employment situation one is not looking for psychiatric cases, but for slight tendencies along that direction. It has often been said that analysis of one's normal personality would disclose tendencies which he would follow were he to become unbalanced. These slight departures from the average are analyzed individually in terms of the position for which the candidate is applying. Occupational profiles

[1] Low scores are desirable in these traits; in other cases desirability depends upon the situation and one's purposes.

are used to compare one with the standard for the occupation, as illustrated in Fig. 4. One considered for promotion to foremanship or employment as salesman should not show too great departures from these profiles. The authors recommend that the test be used in conjunction with application forms, skill or aptitude tests, intelligence tests, and a physical examination. Not much more can be ascertained concerning the use of this test, since the authors apparently treat their findings as a trade secret, applying the test on a consulting basis.

IX. What Traits Are Important for Success?

In our discussion of personality traits presented earlier in this chapter there was no attempt to rank them in order of importance. Which ones are the most important for success in one's vocation? Are the same ones important for every vocation?

Brandenburg made a study at Purdue University (*4*) of the comparative importance of personality traits, grades, and intelligence of engineering students in determining income five years after graduation. Income may not be a sure criterion of success, but is a reasonably good measure, and probably the best single one.

Personality was estimated by having members of several classes rate one another on 29 traits, and also on total personality value. Tables 17-19 show the results of various phases of this investigation. It is instructive to note that personality traits uniformly contribute more toward success than does intelligence, with grades occupying an intermediate position.

Table 17. Correlations Between Income and Traits

Group	*Personality*	*Intelligence*	*Grades*
I	+.72	+.18	+.32
II	+.46	−.18	+.19

Grades give a better prediction than intelligence, although not quite so good as personality. When the two groups are divided into thirds by personality and intelligence, the same trends appear. The progression toward lower incomes for those lower in personality ratings is very regular, and the differences between groups is sizable. But with intelligence no consistent trends appear, and differences between one group and another are small.

TABLE 18. Median Incomes, Compared with Personality and Intelligence Ratings

	Group I	*Group II*
Personality		
Top third	$3000	$3000
Middle third	2316	2700
Lower third	2076	2040
Intelligence		
Top third	2400	2856
Middle third	2580	2640
Lower third	2100	2856

Next, in Table 19 the rating value of each personality trait is correlated with the individual's income. The social qualities stand uniformly toward the top of the list, and it is interesting to note that industry, reliability, and neatness, which are often thought as being of prime importance in selection, are toward the bottom. We see, however, that all traits have positive correlations with success.

TABLE 19. Correlations Between Income and Personality Traits

Accuracy	.77	Tact	.56
Originality	.75	General information	.53
Address	.72	Appreciation of humor	.53
Social and civic interest	.69	Self-reliance	.48
Memory	.69	Cooperativeness	.47
Enthusiasm	.68	Speed in work	.47
Motor ability	.65	Industry	.45
Aggressiveness	.62	Reliability	.36
Popularity	.61	Neatness	.30
Sympathy	.61	Sincerity	.29
General ability	.60	Moral habits	.23
Reasoning	.56		

For several reasons these figures must not be taken too literally. To start with, the unreliability of rating of single personality traits is serious. Probably the actual rating of each trait took in more territory than a strict definition would permit or such high correlations between income and single traits would not have ap-

peared. (See discussion of the "halo tendency" in Chapter XIII.) It also seems unlikely that general ability as estimated by friends would correlate higher with success than does an accurate test measure of that ability.

A Japanese article described superior workers in these terms: indifference about fame and wealth, concentration, testiness (irritability), being absorbed in work though very slow to commence, strong self-confidence, stubbornness, and boldness with respect to work. In Germany a brief statement was given concerning the reasons for rejecting candidates for military commissions. Of 1350 who applied, 750 were accepted. Of the 600 who were rejected, 150 had been diagnosed as of "inadequate temperament and vitality," *150 were too strongly egocentric, 150 were eliminated on personal* objections, and the remaining 150 lacked force and stability of will. It is obvious that these figures are rounded, and also that the diagnostic terms are somewhat ambiguous and loose.

Hoopingarner (7) lists twelve traits as of the greatest general value in business success. These are:

1. Personal impressiveness
2. Initiative
3. Thoroughness
4. Observation
5. Concentration
6. Constructive imagination
7. Decision
8. Adaptability
9. Leadership
10. Organizing ability
11. Expression
12. Knowledge

Each trait is present in every individual to a greater or less degree, *and each is valuable in varying proportions in various types* of business contacts. Further, each trait listed is tangible enough to be measurable, and one may improve himself in each one. The author has devised tests of a self-administrative nature (that is, tests which a person may take at home, at his leisure, and without special instruction or supervision) by means of which one may measure his status or capacity in each of the twelve traits. It is not stated which traits are to be emphasized in selecting a man for any particular occupation, such as salesman, foreman, or executive.

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CHAPTER V

INTERESTS AND VOCATION

I. The Nature of Interests

As we pointed out in Chapter II, interests are like oil to machinery—if one is truly interested in the duties demanded in his occupation, his work will go along with a minimum of friction. One is rarely happy and successful if his interests do not coincide with his duties. Aptitudes, abilities, financial backing—all will be found insufficient if one does not possess the requisite interests as well.

Interests are really one phase of personality, but they are so important, have such direct bearing on vocational choice and success, and are capable of such accurate measurement and application, that we are devoting a separate chapter to them.

About two thirds of college students have practically complete freedom of choice of their life's vocation. The other third may be forced to enter the family business, cannot be financed through professional school, do not possess requisite ability to undertake postgraduate work which they, may, desire, or may, not be in adequate health for a chosen occupation. But actually there are few vocations for which a college graduate does not possess or cannot acquire the requisite abilities, and most of them have had sufficient social experience to have developed their personalities adequately. So interests remain the third major dimension.

Many of us cast envious eyes at persons engaged in certain occupations which appear to furnish the individual with great pleasure and personal satisfaction at the same time he is earning his living. The inventor, artist, musician, poet or writer, pro-

fessional golfer, or conductor of tourist trips, all would seem to lead especially happy lives, since they earn their living doing things the rest of us consider highly pleasurable and in most cases recreational. Actually this may not be wholly true, since regular hours and demands for consistently high-quality work may spoil enthusiasm, and we must recognize that there are some unpleasant sides to any vocation. A world-famous pianist was observed to practice 12 hours the very day of a concert; this is far different from stepping to the piano in one's home once or twice a week to play a few simple songs. But there is no denying the general principle that many people derive a great deal of satisfaction from their positions, and that this satisfaction should be a goal for all of us. Discounting hours spent sleeping, dressing, eating, and in other routine tasks, we have little of life left to enjoy if we cannot derive satisfaction from our work.

Just as various people prefer as recreation golf, tennis, billiards, stamp collecting, building radio sets, or reading philosophy or history, you may choose to become a doctor, lawyer, engineer, agricultural expert, mechanician, hotel keeper, or barber because of the real or apparent advantages each offers, not solely on a material basis, but as these various fields appeal to you.

Immediately the question comes up as to how to ascertain an individual's interests. Merely asking whether medicine is a profession pleasing to him gives insufficient evidence. He may know only of the spectacular and romantic aspects of the doctor's life, but he should not attempt to enter that profession unless his enthusiasm is great enough to triumph over a long and arduous training through college, medical school, and an internship, followed by a period of rather scanty practice and discomforts or annoyances in having to get up at any hour of the night only to find a worried mother or a hysterical patient with nothing really wrong, nonpaying patients, difficulty arranging for a vacation, etc. One with true medical interest would not mind these features, or would consider them as irrelevant in comparison with the tangible and intangible rewards derived from other aspects of medical duties.

Since most of us are not in a position to learn all the facts about all possible vocations which we may consider at one time or another, the best alternative is to develop a test which will measure

one's likes and dislikes, and compare these preferences with those of successful and happy men in the field. Even a long-sustained ambition is not necessarily a guarantee of permanent interest in the multiplicity of detailed duties pertaining to any occupation. The individual may have maintained his interest while knowing little more than the superficial duties of the occupation, yet may fail to learn more about the intimate details of the work as time comes near for his entering it. Here are two cases:

A student went through engineering school, making honor grades, obtained an excellent position with a utility, and did so well that he earned several promotions within a few years. But he tossed up his job and returned to school to take up law, saying that he couldn't stand for another minute the type of work demanded in engineering.

A girl had intended for five years to take up nursing after graduating from college, but she quit training after just one week, finding the duties so opposed to her true interests.

Every occupation has similar "drop-outs," just as every year many students quit college or change their curriculum because of lack of interest and not because of poor grades. In many such instances the loss of time might have been prevented had the student ascertained his true interests by means of an objective measure and by profiting from counseling services available to most college and high-school students.

II. Tests of Vocational Interests

A. Necessity of Measuring Interests

As we just pointed out, not everyone is in a position to discover all facts pertaining to a vocation, so it is desirable to ascertain the actual interests of persons who are successful in the occupation and then compare the preferences of the counselee with these. If we discover that doctors are enthusiastic about certain activities and dislike certain others, and our applicant shows similar likes and dislikes, we may say that as far as this particular aspect of his personality is concerned he is suited for entering the medical profession.

E. K. Strong has devised an interest blank which has proved to be of great merit in vocational guidance. He states (7):

"Men engaged in a particular occupation have been found to have a characteristic set of likes and dislikes which differentiate them from men following other professions. The Vocational Interest Test is a device by which such patterns of interests may be determined. By means of it, also, it is possible to ascertain the pattern of interests with which a given individual's interests most nearly coincide, and hence the occupation for which he is best fitted so far at least as his interests are concerned.

"It is assumed that, if a man likes to do the things which men like who are successful in a given occupation and dislikes to do the things which these same men dislike to do, he will feel at home in that occupational environment. Seemingly, also, he should be more effective there than somewhere else because he would be engaged, in the main, in work he liked."

In ascertaining probable liking for a vocation the fact that a candidate may not have complete information about it is unessential, since the questions on this test include a wide variety of activities and situations which are basic to liking and succeeding. One may know little more about a civil engineer's duties than that he plans bridges and edifices and gets his name on brass plates on these structures. But the engineer must use a great deal of mathematics and do mechanical drawing, and if one has a real aversion to these subjects he will not last long in preparation for this vocation. So the test asks how one feels about doing things pertaining to these subjects, as well as about many other types of situations. The research man should prefer to work alone and be willing to take care of details, while the hotel clerk or salesman should prefer to work with or near people, and the executive must like to direct them. The minister must be willing, and actually take pleasure, in meeting all types of people under varying circumstances. Many other similar vocational preferences could be named, but we shall let the test items speak for themselves.

B. Make-up of Strong Vocational Interest Blank

The test for men has 400 items, to most of which the individual reacts by checking Like (L), Indifferent (I), or Dislike (D). The blank has eight subtests, as follows: 100 items on occupations, 36 on school subjects, 49 on amusements, 48 on activities, 47 dealing with peculiarities of people, 40 on order of preference of activi-

ties, 40 on comparisons of interests, and finally 40 on self-rating of present abilities and characteristics. The women's blank is substantially similar, but has a few necessary alterations, which will be discussed later.

In filling out the blank, one is instructed to work as rapidly as possible and to indicate his first impressions. If he thought it over he could predict what an engineer or a life-insurance salesman might probably feel about each item, so his genuine interests will not have been obtained. Feelings, not abilities or knowledge, are under study, and there is really no "best" answer. Personality and interest scores can be changed markedly, but this is no more profitable than cheating at solitaire.

Representative items from each of the eight parts of the blank are given below. In the first five subtests one is to encircle his feelings with regard to each item; in the last three he checks his preferences within the parentheses.

TABLE 20. Sample Items from Strong's Vocational Interest Blank

Part I. *Occupations:*			
Actor (not movie)	L	I	D
Advertiser	L	I	D
Architect	L	I	D
Army officer	L	I	D
Artist	L	I	D
Part II. *School Subjects:*			
Algebra	L	I	D
Agriculture	L	I	D
Arithmetic	L	I	D
Art	L	I	D
Bookkeeping	L	I	D
Part III. *Amusements:*			
Golf	L	I	D
Fishing	L	I	D
Poker	L	I	D
Collecting postage stamps	L	I	D
Full-dress affairs	L	I	D
Detective stories	L	I	D

TABLE 20. Sample Items from Strong's Vocational Interest Blank (*Cont.*)

Part IV. *Activities:*

Repairing a clock	L	I	D
Making a speech	L	I	D
Handling horses	L	I	D
Organizing a play	L	I	D
Methodical work	L	I	D
Continually changing activities	L	I	D

Part V. *Peculiarities of People:*

Progressive people	L	I	D
Energetic people	L	I	D
People with gold teeth	L	I	D
Bolshevists	L	I	D
People who chew gum	L	I	D

Part VI. *Order of Preference of Activities:*

First 3 Choices	*Last 3 Choices*	
( )	( )	Develop the theory of operation of a new machine, e.g., auto
( )	( )	Operate (manipulate) the new machine
( )	( )	Discover an improvement in the design of the machine
( )	( )	Determine the cost of operation of the machine
( )	( )	Supervise the manufacture of the machine
( )	( )	Create a new artistic effect, i.e., improve the beauty of the auto
( )	( )	Sell the machine
( )	( )	Prepare the advertising for the machine
( )	( )	Teach others the use of the machine
( )	( )	Interest the public in the machine through public addresses

Part VII. *Comparison of Interest Between Two Items:*

Check the bracket nearest the preferred occupation, or the middle one if you have no preference.

Street-car motorman	( )	( )	( )	( )	Street-car conductor
Repair auto	( )	( )	( )		Drive auto
Deal with things	( )	( )	( )		Deal with people

TABLE 20. Sample Items from Strong's Vocational Interest Blank (*Cont.*)

Part VII. *Comparison of Interest Between Two Items* (*Cont.*):

Work involving few details	( )	( )	( )	Work involving many details
Few intimate friends	( )	( )	( )	Many acquaintances

Part VIII. *Rating of Present Abilities and Characteristics:*

	Yes	*?*	*No*
Usually start activities of my group	( )	( )	( )
Win friends easily	( )	( )	( )
Am quite sure of myself	( )	( )	( )
Am always on time with my work	( )	( )	( )
Get "rattled" easily	( )	( )	( )

Loan money to acquaintances ( )	Loan only to certain people ..... ( )	Rarely loan money ... ( )
Worry considerably about mistakes .... ( )	Worry very little ..... ( )	Do not worry ( )

C. Scoring the Test

One may ask: "Well, what have the facts that I would not care to be an actor, that I would like to be a farmer, that I like to tinker with my automobile, that I would rather be a streetcar motorman than a conductor, have to do with whether or not I should become an engineer?" The bearings of many items are logical enough even to one unfamiliar with the test, although justification for other items does not appear immediately. An engineer should like mathematics and scientific work, making a radio set or repairing a carburetor, and would prefer to develop rather than sell a new machine. Many other items have less obvious connections, such as Part V, peculiarities of people, although one might hazard a guess that the presence of too many dislikes might militate against liking and success in occupations involving many social contacts, such as the ministry or selling. However, this has been found: *each occupation so far studied has shown characteristic likes and dislikes which distinguish it from others.* This is a matter of demonstrated fact, and since it works the test is valid, at least in this aspect.

This test was standardized by having successful men (three or more years' participation in that field) fill out the blank and then comparing their responses with the average of men-in-general. Thus, whereas 25 per cent of all men would like to be actors, only 9 per cent of engineers care for that type of work. This, coupled with the percentages on the indifferent and dislike categories, gives a weighting which may be applied to potential engineers. So, scored for engineering interest, one would receive 1 point to his credit if he disliked the idea of being an actor, and scores of 0 and −1 for indifference or liking. Ministers' scores for actor come out to be +2, 0, and −2 for the like, indifferent, and dislike answers; while artists receive scores of +2, 0, and −1; and architects have zero scores for all three alternatives, since the idea of being an actor neither appeals to nor displeases architects in general. In this fashion, weighted scores, mathematically determined, are applied to all 400 answers throughout the test, and the total score is indicative of how one compares with men in each field. Anyone will have many negative scores, but if one's interests are within a certain field, the number of positive scores is found to far outweigh the negative.

Noting that a given answer brings a different score for different occupations, it is clear that this test cannot be scored once and for all, with that score applied toward any vocation, as can the score on an intelligence or personality test. Since different weights apply for each item for each vocation, a different scoring scale has to be used for each projected occupation. Actually, while this procedure does consume extra time, this is undoubtedly one of the principal reasons why this test is able to discriminate so accurately among the several dozen vocations for which it has been standardized.

D. Interpretation

Interpretation of the total score is based on the distribution of successful individuals already in that vocation. An A score is arbitrarily set to include the range of the upper 75 per cent of those in the vocation; B lies in the lower 25 per cent; and C lies outside the range of those in the occupation. Thus for engineers a rating of A includes scores above +90, B is from +20 to

+89 and C is from +19 downward. The fact that such totals, in a test of 400 items, are not very high reflects the fact that everyone receives many zero and negative scores, as well as positive ones, even for a field for which he is well suited.

This scoring procedure may seem rather laborious. It is, to some extent, but the time consumption is minute compared to that which might be wasted if one undertook preparation for or participation in an occupation which should turn out so distasteful to him that he eventually quits the field. A person wavering among three or four occupations can score his blank for all of these in an hour; if he has no definite intentions at all, he can still score himself for three dozen vocations in a day's work or by paying a small fee for mechanical scoring. In either case it is a very small investment for the benefit derived.

E. Women's Interests

Originally the Strong test was designed principally for men, but as more women desired to enter such fields as law, medicine, personnel, advertising, selling, and newspaper work, the question arose as to whether the scores would be equally applicable to either sex. One would think that they should; it is only logical that anyone who has the requisite abilities and personality traits should be successful in an occupation, regardless of sex. But for no obvious reason, it soon appeared that women could not be rated on norms derived from men. This suggests that viewpoints, in this case likes and dislikes, of men and women differ, even if they may have the same general background and may be engaged in the same occupation.

Therefore, a separate test blank and separate scoring scales had to be devised. Many items are identical, but a number are changed to parallel situations, such as governess and nurse included in the part on vocations, and women being asked whether they would have liked to have been Madame Curie rather than Thomas A. Edison, who appears on the men's blank. As yet the test has been standardized for only about half as many occupations for women as for men (see Table 21), due both to its recency and to the difficulty in obtaining criterion answers from the required number of

professional women upon which valid and reliable standardization of scoring scales can be based.

Another important fact, and one which ties in with practical use of test scores for guidance, is that women's interests are less clear-cut than men's. Women do not seem to have such strong likes and dislikes as men. This is probably due to two principal factors: first, that women encounter some social pressure not to be too positive in their expressions of opinion; and second; that most women fundamentally wish to marry and enter upon family duties, which means they take jobs to be busy and earn some *money, but without such strong intention to remain, work hard,* and earn promotions. As evidence of this was the fact that of 94 women freshmen in a teachers college, only 10 rated A or B+ for *woman teacher. We do not find so many A scores as with men, nor* so many C scores. Therefore we are unable to give either as strong encouragement or such positive discouragement.

F. Validity

The validity of this test or any other interest test depends on a number of factors:

1. Interests should be relatively permanent, and not change materially with age or experience.

2. Stability of interests should crystallize early enough so that proper educational and vocational guidance can be given. If this stability does not occur before college graduation, practical use of the test would be seriously limited.

3. Interests of various occupational groups should be separated with little overlapping.

4. Those rating high should succeed better and remain more permanently within the vocation than those with low scores.

These will be discussed in Sections IV through VII.

III. Practical Guidance Through Interests

It has been clearly demonstrated that interests are closely related to vocational choice, happiness, and permanency of work. People tend to enter and remain in occupations in which they are interested, not merely as evidenced through subjective impres-

sions, but also as objectively disclosed by their answers on the vocational-interest test.

How, now, may we actually use the test in vocational guidance? Strong himself is rather cautious against making extravagant claims for his test. There are still a few points of uncertainty about his findings, although the present writer feels that only one of them has especial significance. This item of doubt is that there is some instability of interests around the ages of 16-20, when most guidance is administered. This aspect will be discussed later.

The occupations for which scoring standards have been developed to date are given in Table 21.

The group scales (identified above by the present author's terms rather than Dr. Strong's) can serve as starting points to search first for broad interests, and then scored for independent occupations for more minute diagnosis within the one or two groups for which the student shows A or B+ scores. This broad analysis is especially desirable for high-school use, since interests are not wholly settled prior to the age of 20. "Occupational level" suggests the general level, from the highest professions to laboring jobs, which one's interest scores indicate.

The Kuder Preference Record (3) operates on a somewhat broader basis than Strong's, in the sense that nine large areas of interests are differentiated. These are: mechanical, computational, scientific, persuasive (salesman, counselor, labor leader), artistic, literary, musical, social service, and clerical. Some counselors use this test as a first instrument to sound out broad interests, especially when the counselee has none, or relatively weak, expressed interests of his own, and then proceed to concentrate by means of the Strong test on the one or two groups in which the person scores highest. That is, a boy or girl who may obtain a high score on say the mechanical and scientific areas on the Kuder test will then fill out the Strong test and be scored for individual occupations within those two groups, in order to find more differentiated and specialized scores within those areas. This test is not as yet as thoroughly standardized as Strong's, nor is the validity statistically verified. Standards were computed on high-school juniors; hence use on college students or adults is uncertain (2). Two studies, on men and women, correlating specific Strong scales and the nine Kuder

TABLE 21. Occupations Standardized on Strong Vocational Interest Blank

Group	*Men*	*Women*
I.	Artist	Artist
	Psychologist	Author
	Architect	Dentist
	Physician	Housewife (married woman)
	Dentist	Lawyer
II.	Mathematician	Librarian
	Engineer	Life-insurance saleswoman
	Chemist	Masculinity-femininity
III.	Production manager	Nurse
	Aviator	Office worker (including bookkeeper, accountant, office manager, purchasing agent, etc.)
IV.	Farmer	Physician (doctor)
	Carpenter	Social worker
	Printer	Stenographer-secretary
	Mathematics-science teacher	Teacher—elementary school
	Policeman	English teacher
	Forest service	Mathematics-science teacher
V.	YMCA physical director	Social-science teacher
	Personnel manager	YWCA general secretary
	YMCA secretary	Physical education teacher
	Social science teacher	
	City school superintendent	
	Minister	
VI.	Musician	
VII.	Certified public accountant	
	Accountant	
	Office worker	
VIII.	Purchasing agent	
	Banker	
IX.	Sales manager	
	Real-estate salesman	
	Life-insurance salesman	
X.	Advertising	
	Lawyer	
	Author-journalist	
XI.	President, manufacturing concern	

Group Scales [a]

I. Professional (technical)
II. *Scientific*
V. Service
VIII. Financial
IX. Sales
X. Publicity

Non-Occupational Interests

Masculinity-femininity
Occupational level
Interest maturity

[a] The present author's terms; the groups are only numbered by Strong.

groups, show very low and unconvincing relations. Many correlations which one might think would be of moderate size actually were near zero or even negative. The "persuasive" factor appeared in any strength only in salesmen and sales managers, and even moderately negatively in physicians and psychologists, whose duties obviously involve persuading and instructing others (*10, 11*). Thus the Kuder test either involves other factors than Strong's or else its validity is very doubtful.

Referring again to Table 21, note that the great majority of occupations standardized by Strong are professions or higher ranking business vocations, rather than those on the semiskilled or unskilled level. Hence the test is chiefly applicable to college graduates and others with specialized training of high order. The "Occupational Level" scores can be used for diagnostic purposes to ascertain whether an individual has interests along business-executive and professional or on lower levels. Such use naturally involves educational as well as vocational guidance.

Guidance is in terms of the letter grade derived from the sums of all positive and negative scores. You will recall that a grade of A means that one falls within the upper 75 per cent of individuals who are successful in that profession. Scores of B include the lower 25 per cent of scores in that vocation. Strong accepts a B+ score nearly as readily as an A as evidence that one's interests match his ambitions satisfactorily. C scores indicate entirely different interests. Very few of this rating are found in any occupation; they usually drop out before long, or are actually engaged in something apart from the usual duties of that occupation. For example, one individual with an M.D. degree had a C score, but was not a practicing physician. He was actually engaged in devising and producing surgical instruments—work more along an electrical engineer's line.

It is to be understood that this test measures liking and disliking, and does not purport to indicate aptitudes. Hence it does not suggest possible grades which might be earned in a projected curriculum, such as engineering, law, forestry, or architecture. One might conceivably graduate from a professional school with high honors and then find the duties of the occupation distinctly distasteful. Yet he could have profited from knowledge of his under-

lying interests, and not have undertaken such a curriculum. College students have ability to enter almost any field, but one who leans toward engineering would hardly be suited for the ministry, nor would a YMCA physical director ordinarily be satisfied with an artist's career. In employment circles, an applicant's aptitude is not sufficient; one with no interest in his work is likely to drop out at an early date and may be a problem employee while he lasts.

Strong suggests using all scale scores, as well as just those for occupations the applicant has some idea of entering. Suppose one comes from a family of lawyers and has had no thought other than that of entering law. Then suppose he rates an A or B+ for that occupation. Even here it would be just as well not to be satisfied with this sole score, especially if the rating happened to be in the B range. He should see what his scores are in "supporting occupations," ones which correlate fairly highly with the primary one in the population at large. This may confirm his original choice, or it may suggest that the choice is doubtful enough so that as much further evidence as possible should be gathered from all directions that may be of assistance in vocational guidance. (Chapter II discussed these in detail.) Certainly if one's interests are at all in doubt, and if his own aptitudes and the ability of his family to finance him through a fairly lengthy educational period may be at all in question, he should not undertake that vocational preparation without very seriously weighing all angles. Scores naturally do not give all-inclusive guidance, but they show the occupations and occupational groups which the boy or girl will almost certainly dislike if he attempts them.

A word of caution: possessing a high degree of interest toward an occupation does not guarantee material success in it. It only indicates congeniality. Aptitude is not measured; nor is vigor of work—except in that one who is enthusiastic about the duties of a vocation will work more nearly up to the level of his aptitudes, and will be willing to work vigorously and even willingly put in overtime. A high score, says Strong, "indicates the degree of certainty that certain interests are possessed, not the amount of such interests possessed" (*8*, p. 71).

Groups of interests, sometimes called factors, have been analyzed through correlating interest patterns for the various standardized

occupations. Thurstone claims to have isolated four major factors —interest in science, language (talk), people, and business (9). The statistics showed that one common factor was present to a high degree in chemistry, engineering, psychology, architecture, agriculture, and medicine; and to be disliked by men in advertising, life-insurance selling, and real-estate selling. This, then, from both positive and negative patterns, was taken to be an interest in science. Likewise, one which was present in ministers, teachers, YMCA secretaries, and personnel men must be a distinct liking for people. Turning to a single occupation, chemistry is made up of a high degree of interest in science, slight dislikes for language and people, and indifference to business. Ministers like language and people, are indifferent toward science, and find business slightly distasteful. Strong's mathematical analysis discloses five factors, four of which correspond with Thurstone's list: dealing with people vs. things, science, language, business, and creative work. Strong is less prone to give a factor a definite name since there are some peculiarities. For example, Strong finds science as a factor, as does Thurstone, but in addition to those in the occupations that one would expect to demonstrate a high degree of scientific interest, musicians, ministers, and policemen also have a high loading, and certainly neither their duties nor their personalities, as we would assume them to be, are in keeping with a high degree of scientific interest. These factors can be used in their negative as well as positive aspects, since the first factor shows high loadings for architect, physician, chemist, mathematician, and others, but a negative loading for office manager, banker, sales manager, personnel worker, etc.

Guidance on the basis of interests toward an occupation for which no scoring scale is as yet available, such as a girl who is thinking about becoming an air-line hostess or a boy who would like to be a commercial fisherman, is extremely questionable. It might seem logical enough to combine the interests of occupations that involve similar degrees of interest in people, in scientific pursuits, and in business dealings, with an analysis of the projected vocation. But Strong's test succeeds so accurately in differentiating apparently similar interests, such as real-estate salesmen from

life-insurance salesmen, or doctors from dentists, or teachers in general from social-science teachers, that one cannot venture to stray very far to decide by analogy. Therefore what is a very definite merit of the test proves a disadvantage in some cases. Cautious use of the test is imperative, and the decision must be made on the basis of complete knowledge of the occupation and its duties—more than is necessary (although full information is advisable in all cases) if a scoring scale has been developed for that vocation.

IV. Permanence of Interests

A. Validity

If any test is to have predictive powers, the trait it measures must either remain constant or must change in known direction and degree. Our present question, then, is: Are interests—total score, not necessarily answers on single items—constant enough so that a high-school senior's or college freshman's likes and dislikes will resemble the interests of men of 30 or more, who have undergone professional training and are engaged in the proposed vocation?

B. Are Interests Innate or Acquired?

This question cannot be answered summarily, but we do know many instances of failure of parents to induce their children to enter medicine, banking, school teaching, music, etc. Yet we could counter with as many cases of imitation of interest by a son of his father's enthusiasm for law, fishing, tennis, or card games. It is possible that native elements contribute to the general direction of interests, although the final direction is possibly acquired. For example, a man may be fond of sports, but environment will determine whether he takes up golf, swimming, skating, or polo.

Neil's father and grandfather had been bankers, and he had been given every opportunity—in fact forced—to learn that profession. He followed it a few years, after completing the university school-of-commerce curriculum, while taking all possible electives in music. But he always found it distasteful. Now as a professional pianist he is doing far better than he ever would have done as a banker and, what is more important, is enjoying

life thoroughly. What one might term poetic justice, he is also supporting his father, the family bank having failed.

C. Interests Before Maturity

We know that personality traits shift more in youth than in adult years. How early, then, do interests crystallize to an extent necessary to be able to predict vocational interests? Although the test is standardized principally on the professions, vocational guidance ideally should be administered by the freshman year of college or even senior year in high school. Even if one is aiming at a profession calling for graduate work, such as medicine, law, or a science, he will have to start his pre-professional sequence as soon as he enters college. For those who wish to undertake a curriculum which starts with entrance, such as engineering, agriculture, or home economics, high-school guidance is almost indispensable.

Strong says that determination of general direction is about as far as the high-school counselor should attempt. Counseling then will be such as: "You show high interest for science in general, but I would suggest you take courses in several branches before committing yourself to, say chemistry." The test is not claimed by its author to be at all reliable before 18—in other words, it should not be used before high-school senior or college-freshman ages.

D. Stability of Interests During Maturity

A great deal of data is available on the problem of stability of interests during maturity (*6, 8*), but we shall only point out that in general there is striking similarity between the likes and dislikes of men all the way from 20 to 60. College seniors were given the test, and they again completed the blank ten years later. Four fifths still rated A or B+ in those occupations in which they scored A on the first occasion. Ninety-seven per cent who had scored C still rated C or a low B ten years later.

To illustrate how little significant change does occur, we quote in Table 22 the ratings of one individual over a ten-year interval, from ages 21 to 31. What changes occur are generally slight; also high scores are closely related to this individual's vocational and avocational interests, as personally known to the present writer.

TABLE 22. Interest Scores of One Individual at Ages 21 and 31

		Age 21	Age 31			Age 21	Age 31
1.	Artist	B+	B−	20.	City school superintendent	C	B−
2.	Psychologist	A	A	21.	Minister	C	C+
3.	Architect	A	B	22.	Musician	A	A
4.	Physician	A	B−	23.	Certified public accountant	B−	B−
5.	Dentist	A	B−	24.	Accountant	C	C
6.	Mathematician	B+	B−	25.	Office worker	C+	C+
7.	Engineer	B	C	26.	Purchasing agent	C	C
8.	Chemist	A	B	27.	Banker	C	C
9.	Production manager	B	C	28.	Sales manager	C	C
		C	C+	29.	Real-estate salesman	C	C+
10.	Farmer	B	C+	30.	Life-insurance salesman	C	C
11.	Carpenter	C	C	31.	Advertising manager	B−	B+
12.	Printer	B+	B	32.	Lawyer	B−	B
13.	Mathematics-science teacher	B+	B−	33.	Author-journalist	B	B
14.	Policeman	C	C	34.	President, manufacturing concern	C	B−
15.	Forest service	C	C				
16.	YMCA physical director	C+	C				
17.	Personnel	C+	B				
18.	YMCA secretary	C	C				
19.	Social-science teacher	C+	B				

E. Interests and Vocational Participation

Of even greater importance is the fact that participation in an occupation does not increase the interest score. Suppose one's parents attempt to force one into say electrical engineering or dentistry, with the argument that in spite of the fact that the youth at present neither cares for the occupation as he knows it nor has a satisfactory interest score, he should like it more and more as he gains experience in it. These assumptions are clearly unfounded, as Strong's data demonstrate. Large item changes, say from like to indifferent, or dislike to indifferent, are relatively infrequent, and generally balance each other. Shifts of two categories, like to dislike or vice versa, occur very seldom.

To summarize this section in a few words: interests arise early in life, are fairly stable after 15, highly stable after 20-25, and are surprisingly little influenced by occupational training and experience.

V. Discrimination Among Vocations

Another requirement for the validity of an interest test is that it must separate clearly the various vocations for which it might be scored. Evidence that it does this is provided by several studies. Few men score highly for occupations other than the ones in which they are engaged, and in which their test scores show they should encounter congenial duties. In one survey, members of several occupations rated almost exactly the expected 75 and 25 per cent of A and B scores for their own vocations, but in only one case was there any sizable percentage of A's for an "outside" vocation, and this was that 20 per cent of bankers rated A for certified public accounting. This is logical enough, as both have primarily financial duties.

In another experiment 1200 men attending an industrial meeting were persuaded to fill out the blank. Exactly 75 per cent of the personnel men rated A for that profession, yet only 39 others scored A. Individual analysis showed that many of these latter industrialists were really engaged in functions which might be classed as personnel, although their organizations maintained no such department as a separate unit. Even though their actual titles may have been such as engineer, assistant manager, or assistant to the president, their titles were misleading, and the test thus disclosed their true interests.

There are several instances of overlapping interests, as we just saw illustrated in the overlapping of C.P.A.'s and bankers. Interests of chemists, engineers, and farmers overlap considerably. Lawyers and journalists likewise show similarity of interests. Differentiation among various types of executives discloses some interesting comparisons. Finance executives rate high for accountants' interests, but low for selling; engineering executives score high for office work and pure engineering functions, but low for selling; and merchandising executives score high for life-insurance selling. Analysis of occupations thus overlapping invariably shows that a large share of the duties and problems are held in common.

Occupational levels have been discovered, and these work on a little different basis from our differentiation of one occupation from another. Professional men, such as doctors and lawyers, while easily differentiable from each other, show more similarities with each other than do men on subprofessional levels. Thus a male orderly in a hospital or a practical nurse is not merely one with medical interests who for some reason did not complete a full-fledged medical course. Interests are different. Whereas professional men average +117 points on their scale, and businessmen +81 points, unskilled workers score −32 and −18 points on the professional and business scales, respectively. As Strong says (*8*, p. 191): "It is evident that there is a definite progression in scores from unskilled to semi-skilled and to skilled men and from there upward to the broader and more executive types of business activities and the professions." Another finding is that interests are not so accurately differentiated among the lower-rated occupations; stated conversely, there is greater similarity and less specificity among these workers than there is among professional people.

In terms of practical guidance, this scoring scale has use for boys or girls who profess vocational ambitions clearly beyond their basic educational capacity. Often these ambitions are more parentally induced than genuinely existent within the counselee, and a serious conflict may result. A boy, for example, may have mechanical interest, but on a practical and nontheoretical level. If his intelligence is just about average, it is clear that on the basis of the two test scores he is cut out to be a garage mechanic, plumber, or repairman. He would be unhappy and out of place in an engineering school.

VI. Relations of Aptitudes to Interests

We have assumed that if one is interested in an activity he will work harder and longer, and probably accomplish more than if the work is dull routine to him. But does aptitude also accompany this interest? We know in daily life that interest and aptitude are far from perfectly correlated. A student earns an A in one course and barely passes a second. Enthusiastic golfers and bridge players may be far from expert.

But on the other hand, we would grant, on a common-sense basis, that there must be a fair degree of positive correlation. We play golf or elect psychology, happen to find ourselves better than average, and our enthusiasm redoubles. Success reflects aptitude, and interest both causes and stems from success. Both positive and negative evidence taken together, it appears that while there is some agreement between interests and abilities, the agreement is so far from perfect that mere expressed interest cannot by any means be taken as evidence of potential ability for a school subject, and hence probably for a vocation as well.

General level of aptitude may be suggested by interest, even if in an unspecific way. In a survey of 16,000 high-school seniors there was a fairly good degree of correspondence between level of ability and vocational choice. The brighter chose the higher professions and the more difficult academic curricula, although it is to be realized that all students had at least a good degree of intelligence, and that there was a wide range of intelligence within each curricular group. Students electing courses such as classics and philosophy are invariably found to be above average in scholastic aptitude, whereas the more borderline cases choose the practical and vocational sequences.

VII. Interests and Actual Vocational Success

So far we have principally discussed the value of the interest test in terms of individuals liking and remaining in vocations for which they have A or B+ scores. Another question of validity might be: Are these people successful in proportion to the size of their scores?

We shall not enter into a debate as to what success means or is. For pragmatic purposes we shall confine our discussion to earning an economically sound livelihood and ignore less tangible returns such as service to mankind or personal prestige.

Salesmen's interest scores were compared with their earnings in several different ways. If the test predicted exactly in proportion to magnitude of score we would expect life-insurance salesmen to line up as follows: men with C or low B interests would be almost invariably unsuccessful, those with B+ or low A interests should be moderately successful, and those with high A interests should be

successful in proportion to the magnitude of positive score above the division line between B and A. Actually, several insurance salesmen with C interests did not earn a livelihood in spite of having attempted that work for three to nine years. Among those who sold $400,000 or more annually, the majority rated A or B+, and none below B. (At least $200,000 is necessary to make a living, although an exact figure depends somewhat on whether he lives in a large city or a smaller town. Furthermore, many people sell insurance on the side to supplement the income derived from their principal occupation, so their scores would be more or less irrelevant.)

In another study 70 life-insurance salesmen filled out the interest blank, an ascendance-submission blank, a "study of values" questionnaire, and an intelligence test of moderate difficulty. Of this battery, interest scores alone succeeded in differentiating between those earning over $3000 from those earning less than $2000 annually.

However, among those who are considered successful, there is no consistent difference in magnitude of score between the moderately successful and the highly successful—the "million-dollar club" we hear spoken of among insurance men. The difference which does show up is twofold; score distinguishes between successful and unsuccessful, and it predicts likelihood of early turnover.

Another approach to this same problem is to make an analysis of cases of individuals who score low on the test for the occupation in which they are engaged. Four such cases are cited below.

1. Electrical engineer, 50 years old, rated C in engineering. Had received M.D. degree, but actually designs electrical equipment, primarily surgical instruments.

2. Electrical engineer, 43 years old, is apparently a typical electrical engineer for a power and light company. Finished college engineering course, but ranked C on the engineering scale. Says: "I have daydreamed of real estate, stocks and bonds" and "I have always had an idea of entering the commercial field, in the above-mentioned lines."

3. Civil engineer, 38 years old, has general supervision of all kinds of construction work. M.S. degree. Remarks: "I plan to go into general con-

tracting work for myself at some time in the future, but I am well pleased with my present connections." Rated C.

4. Psychologist, 32 years old. Rates B as psychologist, but is chiefly interested in guidance and personnel work. Since the scoring scales were chiefly standardized on the more academic psychologists, the diagnosis of an applied psychologist cannot be considered entirely appropriate. This suggests that standardization of a profession must be changed from time to time, as duties and trends may change or as subdivisions originate.

The three engineering cases sketched appear to have fundamental interests of inventing, selling, and executive work, respectively, rather than being fundamentally interested in typical engineering problems. In the first and third cases the classification of engineer was perhaps not entirely accurate, and in the second the individual himself admitted that his basic interests lay elsewhere. Yet all were earning their living in their respective vocations.

So, from practical experience as well as technical and statistical studies, it is clear that the test has high validity. Just as does intelligence, interests appear to guide one's destinies, even largely apart from the student's conscious realization. Lack of interest usually manifests itself before the individual has gone too far in educational or vocational tryout, just as lack of scholastic ability usually manifests itself in low interest toward "book learning." But in some instances a poorly founded ambition or outside pressure may cause a serious waste of time before a revision of vocational preparation is made. To eliminate this lost time and possible personality repercussions, the comparatively slight amount of time to fill out and score the test will be very well spent.

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CHAPTER VI

VOCATIONAL APTITUDES AND ADJUSTMENT

I. Special Vocational Aptitudes

In the last three chapters we have discussed three broad traits: intelligence, personality, and interests. In this chapter we shall discuss specific vocational aptitudes as well as bringing together many of the threads of the three preceding chapters.

The great majority of occupations demand at least some degree of each of the major aptitudes. As for example, questionnaire analysis of qualities needed by inventors, circulated among inventors themselves, disclosed rather surprisingly their own declaration that business ability was one of the most important attributes to an inventor (22). Contrast this with the popular stereotype of an inventor as a completely impractical man, shut up in a secluded laboratory, with his head in the clouds. A laborer is sometimes humorously categorized as "strong back, weak mind," yet observe this quotation from Bingham (3, p. 114).

"Watch this trio of piano movers at their work. They each weigh two hundred pounds or more, mostly bone and muscle. They move a little slowly, but somehow very expeditiously, with no false movements, as they rig the tackle to the roof of the house and hoist the bulky instrument to the upper-story window. Notice the apparent ease with which they heave it across the sill, passing the weight from one to another, balancing it, resting it, up-ending it onto a cradle which they call a 'dolly,' and finally lifting it into the desired corner without a scratch on the polished surface. Must a piano-mover be strong of back? Of course. But that is only the beginning. His trade knowledge of just what to do and when to do it is

indispensable. Equally essential are his skills and knacks in doing these things adroitly, not *to mention his cool* head, his 'nerve.' "

One could express the situation this way. In a given occupation intelligence, or personality, or delicate motor coordination, or

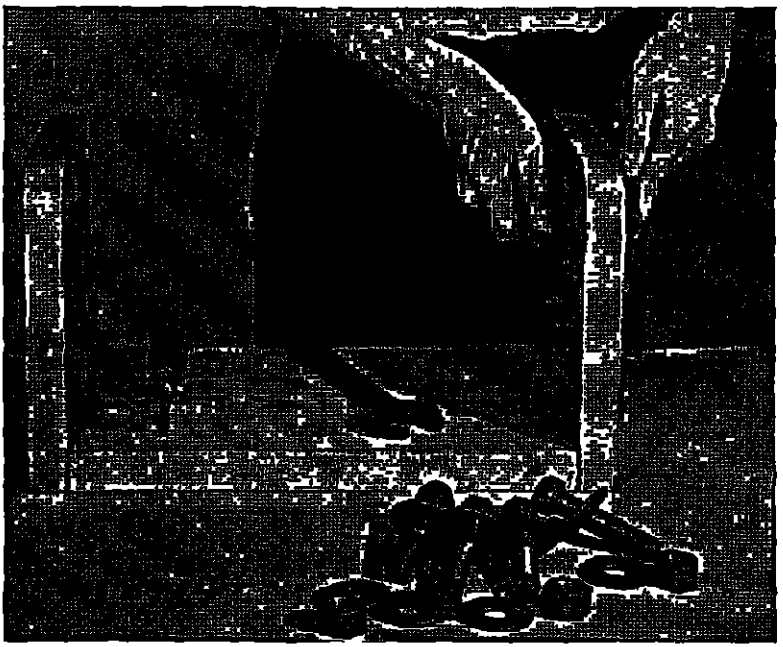

FIG. 5A. Hand-Tool Dexterity Test. An assembly task to measure proficiency in handling mechanics' tools. (Figs. 5A, B, C reproduced by courtesy of the Psychological Corporation.)

brute strength, may be the paramount attribute. Yet each occupation demands a certain degree of each of these other abilities. Do not say, therefore, that a worker doesn't need *any* intelligence, nor a research man *any* mechanical aptitude, nor a salesman any but social intelligence. Each of us must possess some degree of each of the aforementioned human aptitudes to do successfully any part of the world's work.

The Employment Stabilization Research Institute of the University and the State of Minnesota studied vocational patterns,

and drew up occupational profiles, which show in pictorial form the extent to which various abilities fit into the various professions. Since the majority of workers do fall into professional, clerical, or mechanical levels, tests measured these three major aptitudes. The intellectual-aptitude tests included not only measures of

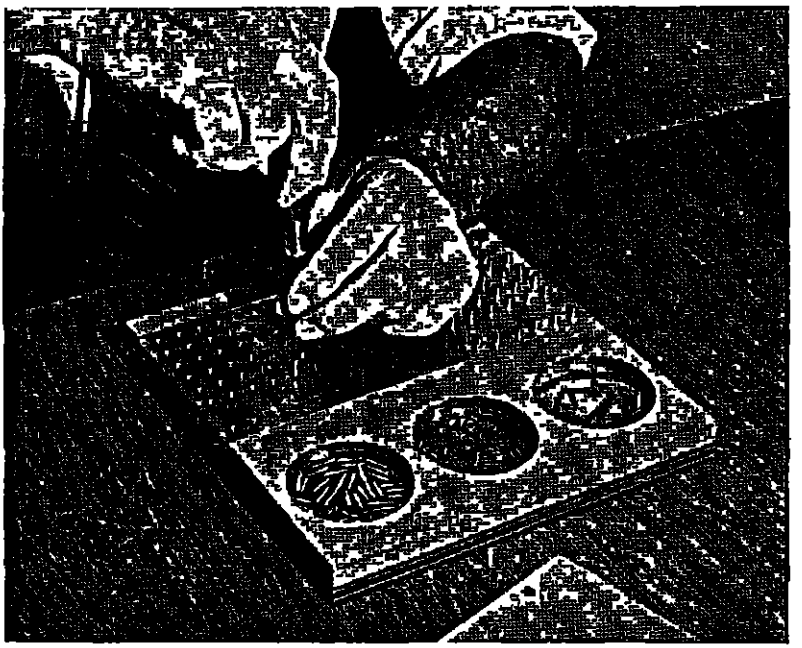

FIG. 3B Crawford Small Parts Dexterity Test. Screw is inserted by hand, then screwdriver is used to turn until screw falls through hole.

abstract intelligence, but also of educational achievement, which latter shows how much one has profited from his schooling. The *Minnesota Vocational Test for Clerical Workers* measured the speed and accuracy with which one can perceive similarities and differences between pairs of names and pairs of numbers. The test items demanded checking as to whether numbers such as 307 and 309 and names such as L. T. Piver and L. R. Piver are the same or different (20).

The motor or dexterity tests are rather general in scope. Peg

tests, similar to the well-known cribbage board, called for inserting pins both with tweezers and with the bare fingers. Assembly, manual-dexterity, and spatial-relations tests were also administered. Photographs of tasks very similar to these assembly and manual dexterity tasks are presented in the three parts of Fig. 5. The pictures and captions will make the nature of the tasks apparent.

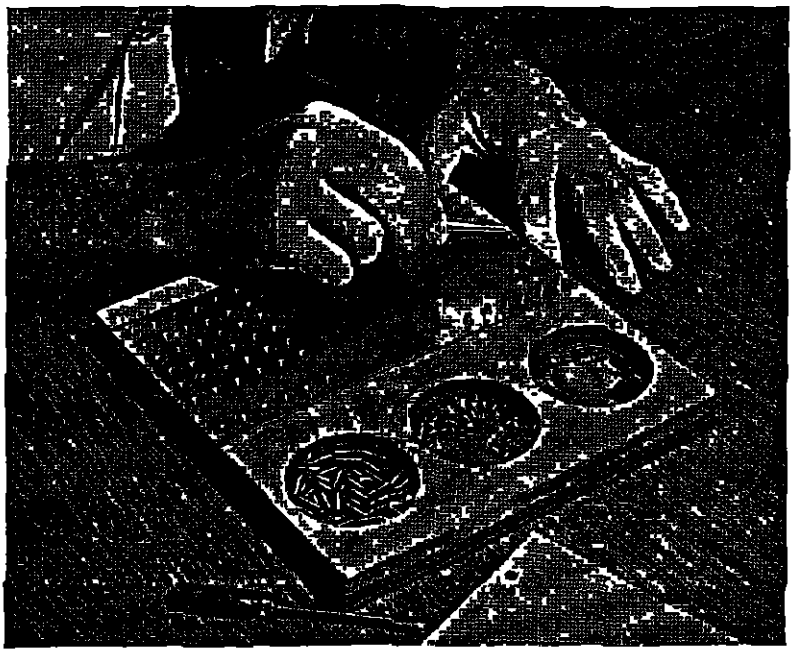

FIG. 5C. Another Use of Apparatus Shown in Fig. 5B. Peg is inserted with tweezers and then collar is placed over peg.

Finally, interest tests, personality tests, physical examinations, and tests of special abilities when appropriate were administered. Each test score was converted into standard units, then objective personal data (age, work experience, family status, etc.) were added, and finally the personal interview was used to bring the various threads together. For complex cases, a staff clinic may be necessary before the most appropriate solution can be suggested.

To illustrate the method of analysis, let us present a sample case

ROBERT SMITH, AN EARLY UNEMPLOYED[1] WORKER

Age 34, married; no children, native born, 34 years in city, completed twelfth grade at age of 17

Work History

1915 16 bank messenger at $65 a month, 1916, car greaser at $18 a week for 8 months, 1916 26, railroad clerk at $87 50 a month, left this job because of ill health, 1926 28, idle, 1928 29, elevator operator at $20 a week 1929 to October, 1930, specialty sales, commission, unemployed since October, 1930

Clinical Findings

Medical Overweight, low vital capacity, pyorrhea refractive error in left eye artificial right eye from accident at age of 12 This man should have had employment in accordance with specific physical handicaps

Occupational Test Records Tenth grade educational ability, clerical abilities in lowest 25 per cent of the general population, finger, tool, and manual dexterities in lowest 15 per cent of the population, mechanical abilities better than 81 per cent of the general population, perception of spatial relations in lowest 15 per cent of the population; measured and claimed vocational interests in technical and mechanical types of work

Interviewer's Ratings Clean, neat, easygoing, apathetic, heavy, morose, is being supported by wife and mother, complains of ill health

Diagnosed Causes of Unemployment Personal, physical defects likely to reduce efficiency, uniformly poor measured abilities for clerical work, interest in mechanical work, work history indicating continued marginal work record, interview information indicating poor personality adjustments and tendency to avoid reality by using poor health as an alibi (*20*, p 13)

For diagnosis and guidance, test scores are converted into standard deviation units above and below the mean, put on a chart in the form of points, these points connected, and the individual's profile then appears. This profile can then be compared with that of successful workers in various fields, and ideally

[1] Early unemployed means that he was among the first to be laid off when the depression necessitated reduction of forces

the individual can then be guided into the vocation his particular set of aptitudes suggests. Two sample profiles are given.

In the first chart we can compare the aptitudes of those workers who were marginal and lost their jobs as soon as any curtailment was necessary shortly after the beginning of the depression, those who were not dismissed until later, and finally those who were

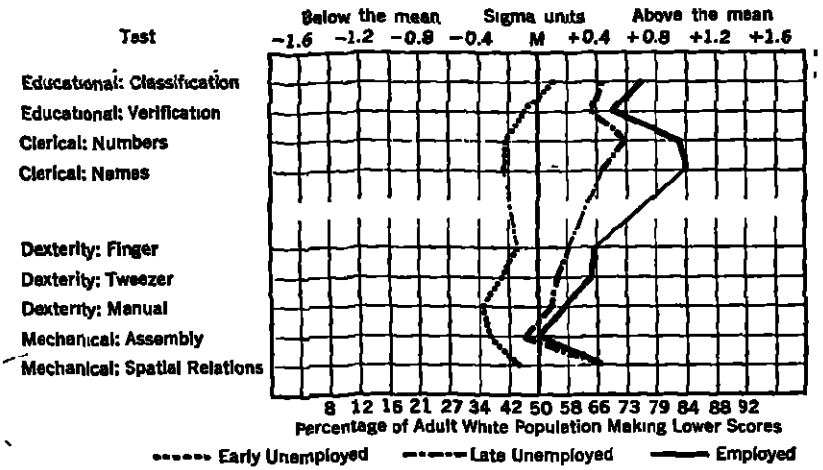

FIG. 6. Occupational Test Scores Made by Early Unemployed, Late Unemployed, and Employed Women in Clerical Positions. (From Paterson and Darley, *Men, Women, and Jobs*, University of Minnesota Press.)

retained and so would be rated as among the best in their fields. The second profile shows the traits of those in two occupations which appear to demand almost completely opposite characteristics, that of retail saleswomen and of women office clerks.

Validation and practical use of such profiles will depend on the majority of successful individuals in a given vocation conforming fairly closely to the pattern, and on the individual's conforming to the *essential* traits for his projected vocation. We emphasize "essential," since some aptitudes may be largely irrelevant for a given occupation. Fine motor coordination makes neither a good nor a poor policeman or lawyer; high clerical ability would be of little importance to a worker in a steel mill.

"Individuals from a given occupational group can be differentiated from the general population on the basis of certain tests. Thus the distinguishing characteristic of garage mechanics is superior performance on the mechanical ability tests. On the other hand, clerical office workers are differentiated from the general population on the basis of tests of abstract functions (educational ability and clerical aptitude)" (6).

It is perfectly possible that two individuals, both failures at their present work, could exchange positions and each be highly

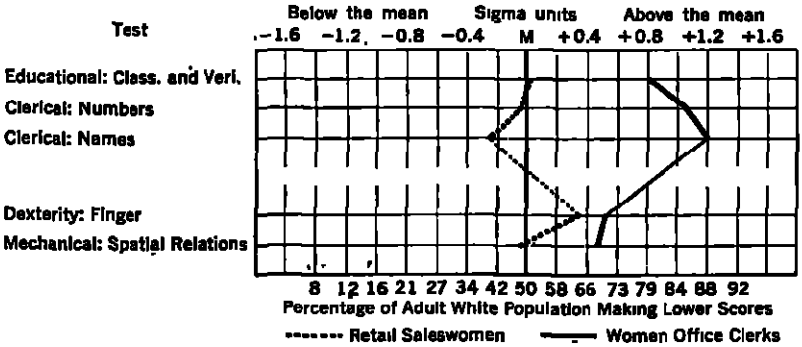

FIG. 7. Occupational Test Scores Made by Women Clerical Workers and Department Store Saleswomen. (From Paterson and Darley, *Men, Women, and Jobs*, University of Minnesota Press.)

successful in his new line of work. One with below par motor coordination will suffer in machine operation, especially if on a piecework basis, whereas he might have better than average clerical aptitudes. A second person might present a picture just the reverse of this, rating higher in mechanical than in clerical aptitudes. Office clerks are far better on a clerical test than garage mechanics, while the mechanics surpass the clerks by almost as much on the dexterity and mechanical-ability tests. It is important to note, however, that it has been established that these performances are only partially due to experience or training; they appear to be largely native aptitudes, little subject to learning.

A striking individual example is the case of the woman portrayed below. Her case history shows that she had been trying occupations for which she had the least opportunity of success

and had neglected others for which she had better than average aptitudes.

"The person in question is a middle-aged woman, thirty-nine years of age, American, born in South Dakota, educated in a small town in that state and graduated from high school at eighteen years of age. Her father was a farmer. She spent four summer sessions in a normal college and later took nine months' training in typing, stenography, and bookkeeping in a business college. She began work as a sixth and seventh-grade schoolteacher in a small town in Minnesota. After two years she moved to another small town, where she taught all the grades for one year. She then taught in two other places, one year in each place. Her highest salary as a schoolteacher was fifty dollars a month. In 1914 she became freight clerk for a railway company in a northern Minnesota town. In this position she made out bills, made abstracts, and looked after the correspondence regarding outgoing and incoming freight. Her salary in this position was sixty dollars a month. In 1915 she was married but continued to work as freight clerk. She was laid off in 1916 when the new agent was married and gave his wife the job which this woman had filled. She had had no regular employment since 1916" (20, p. 80).

The standard test battery of intelligence, clerical, and mechanical aptitude was administered, and it was found that this woman scored very low in the first two aptitudes, but was well above average in mechanical ability. A job in a factory was secured for her, the work demanding fairly delicate coordination, and she was not only successful, but soon developed a more favorable attitude toward working than she had ever held previously.

In addition, certain other more specialized aptitudes should be studied in individual instances. Since these are not as common as those aptitudes we have been discussing, we shall merely mention them by name. Art and musical talents can be tested with a fair degree of accuracy. Visual- and auditory acuities, necessary for aviation and certain industrial operations, are measurable by special instruments devised for these particular purposes. Scientific aptitude has been fairly accurately measured in a test wherein even the student who has studied no science can find a prediction of his probable aptitude. Special tests have been devised for the professions of law, medicine, engineering, and nursing, although it

must be admitted that their predictive value is only mediocre. Some of these tests will be discussed in Chapter XII.

II. Age and Vocation

Since this book is primarily designed for people in early maturity, principally on the college level, we shall touch only briefly on the influence of age upon aptitudes and characteristics.

A. *General effects,* like all individual differences within a group, are subject to wide variation. One person of 50 may outlast another of 25 at working, mountain climbing, or tennis. But, speaking broadly, one is at his peak around 20 in sensory and motor speed and agility, perhaps at his endurance peak between 25 and 30, has declined materially only so far as the most strenuous activities are concerned before 50 or 55, and perhaps never shows any decline in working effectiveness up to his retirement age (*17*). This is especially true of the types of occupation chosen by the great majority of college graduates. In these cases the principal effects of age are upon endurance; one as early as his thirtieth birthday begins to discover that he cannot lose sleep in the middle of the week, or have several strenuous days in a row without noticing it.

B. *Intelligence* test scores show a gain to a peak at about 16-18, an even level to 30, a slight and gradual decline to 55, and a more rapid decline after that age (*16*). Those of lesser education show an earlier and more rapid decline. This is probably principally due to occupational stimulation; for example, an engineer or a lawyer constantly work with symbols and words, which give practice in functions called for on intelligence tests.

C. *Personality* changes with age are perhaps largely caused by loss of the athletic type of vigor. One cares less for new and daring activities, is not so interested in sports and dancing, prefers the more quiet types of social affairs, is more cautious and conservative. One resents interferences and obstacles in his affairs, which accounts in large measure for the "crotchetiness" of older people. Realizing this possibility, one can inhibit it.

D. *Learning ability* at various ages may be summed up thus: it declines hardly at all if one keeps in practice; it drops less in accustomed tasks such as one's own vocation than in a new field; and it

fades less in meaningful tasks than with rote materials such as telephone numbers or technical formulae (*12, 18, 23*).

E. *Imagination* shows some interesting trends. It appears to flourish most in youth, as seen in vivid dreams of children, as well as uncontrolled flights of imagination on the part of adolescents and young adults. The age at which inventions and great discoveries have been made has been studied, and the greatest bulk fall in the neighborhood of 40 (*18*). Apparently this age permits the greatest combination of experience and imagination. Those younger may be impractical and less critical; those older too bound up in accustomed practices.

F. *Motor and sensory abilities* for most occupations remain at a satisfactory level during one's active career, with minor visual and auditory defects mechanically correctable. We ignore unusual cases such as paralysis, cerebral disorders, total blindness, and multiple amputation.

G. *Job acceptability* on the part of older people may handicap them much more severely than demonstrable decline in abilities warrants. Businesses—retail, manufacturing, wholesale—have an average span of life of only a little more than seven years, so workers may find themselves displaced through no fault of their own, and find themselves severely handicapped in securing a new position, especially if they try to enter a different line of endeavor. After the age of 40 the difficulty of reemployment increases rapidly. One nationally known concern awards no promotions after the age of 42. Such policies must be considered as unfair discrimination, as the facts are against them. Earnings on the part of college graduates reach a peak at 55, although it must be conceded that in many cases this is partially produced by cumulative effect in business intake or personal promotion resulting from earlier efforts.

III. Sex and Vocation

A. *Numbers of women in business and industry* have increased many fold during the last fifty or seventy-five years. A hundred years ago few women were permitted to go to college; they were considered incapable of assimilating higher education. The Territory of Wyoming, "where men are men," but where they seemed to appreciate their women, granted the suffrage to women in 1869,

but the 19th Amendment to the Constitution of the United States was not proclaimed until 1920, two generations after racial equality was proclaimed. Women were principally occupied as teachers, secretaries, and nurses until fairly recently, but now they are represented in virtually every occupation listed in the U. S. census. The numbers in many vocations, however, are limited, and in many they do not have equal opportunities with men for advancement. As with age, most of this discrimination is not borne out by psychological measured facts.

B. *Intelligence and academic achievement* show a virtual equality of the sexes, although there may be some minor subtest differences. Boys are better in mathematical and scientific fields, women in verbal and literary subjects. Even these slight differences, which actually are more group than individual, are perhaps more induced by society than innate. Some women are found in mathematics and even in engineering, and of course there are many male poets and fiction writers (*15*).

C. *Personality* differences almost vanish upon actual measurement, like other traits being more evident in group averages than in individual cases (*26*). Men are slightly more extroverted, more self-sufficient and dominant, and women a little more neurotic and submissive. Men's interests tend to be more active and objective, women's social and personal. Tabulation of conversations of men talking to each other show that with them business, current events, and sports predominate; whereas women talk about men, other women, and clothes. But who can deny that these differences are socially induced? The same may be said of the relatively few behavioral differences that may be detected. But they have practical repercussions. Since women are inclined to take things more personally, supervising women in industry involves special problems.

D. *Motor-coordination* differences are not as wide as is popularly assumed. In sports such as tennis, golf, and swimming, women's performances much more nearly approach men's than was thought possible twenty years ago. In one study the writer (*13*) attempted to verify the common assumption that women are superior in the more delicate tasks, and men in the cruder ones, but no such consistent differences appeared.

E. *Vocational advancement* is somewhat limited for women, due partially to social factors. Most girls intend to get married sooner or later, so have less ambition to work for promotion. They are usually less on their own than boys of the same age, living at home often without paying for room and board in many instances, so they need money only for clothes and luxuries. Employers hesitate to train women for promotion, for fear they will get married and resign, or if married quit to raise a family. If promoted to a supervisory position, they may find that not only men but other women dislike to work under their direction. In many instances women find themselves competing against each other and not against men on an equal basis. That is, certain positions are more or less earmarked for women, and no opening can arise unless one resigns and can be replaced by another. A hospital staff, for example, may have one place for a woman doctor, in women's and children's diseases. Women psychologists are principally limited to the fields of mental testing and child psychology.

IV. Unemployment

Those who have not found regular employment in recent years can offer valuable information. A crucial question is whether the fault in a particular case is economic or psychological, whether it is chance or determined by some fault in the individual's make-up. Only several small surveys have been made and these are far from complete. It is unfortunate that governmental agencies which have dispensed many billions to help the unemployed have not had the foresight to earmark a fraction of one per cent of this total to make an entirely dispassionate and nonpolitical survey of this major problem. The results would undoubtedly pay for the costs many times over.

At the outset, we realize that *temporary unemployment* may not be the individual's fault. For one thing, the median life of manufacturing, retail, or wholesale establishments is only seven or eight years. The best worker or salesman in the world cannot be blamed if his concern goes bankrupt. Further, it was noted that during the worst of the depression, 1930-1935, the percentages of unemployed for various industries and even for the various countries of the world, were about equal. Still, if reduction of the

payroll is necessary, who will be released? Will it be a matter of chance alone, will it be simply a matter of the most recently employed workers, or will it depend on personal characteristics? Let us, then, look over the situation.

A. Occupation

On the basis of gross figures, professional and business classes suffer less during periods of stress. Yet since most of these are self-employed, serious reduction of business might occur without the individual's being classed as unemployed, whereas the salesman or factory worker is often totally without income if conditions become equally bad.

B. Place of Residence

Vocational difficulties are usually more accentuated in large cities than in smaller towns or rural regions. In fairness, this may be said to represent only a smoothing out, however; in boom times the city dweller becomes more prosperous, whereas the farmer's situation shows less fluctuation.

C. Migration

It is recommended that one should not go far from his home community in seeking work (see Chapter VII). This has been statistically verified. In Philadelphia it was found that far more of recent "immigrants" than of long-time residents were unemployed (*19*).

D. Previous Occupational History

The unemployed consistently had had in the past more jobs, shorter duration of each, and more periods without work than those who were employed or who had only recently run into difficulties (*19*).

E. Economic Versus Social Reasons

In Minnesota, extensive testing and interviewing showed that many more were unemployed because of personal than economic *reasons.*

F. Age

The figures show that age is not an important factor apart from the extremes. The following table, from an extensive survey made during the same week in Buffalo, New York, a large manufacturing center, and Lincoln, Nebraska, a state capital in a farming region, during one of the most serious stages of the depression, illustrates this (*24, 25*).

TABLE 28. Percentage of Unemployment of Males, Able and Willing to Work, of Various Ages

Age	*Buffalo*	*Lincoln*
Below 20	59.6%	38.4
20-24	41.4	
25-29	28.3	16.2
30-34	20.7	13.6
35-39	22.5	16.0
40-44	22.5	15.2
45-49	23.2	16.4
50-54	25.9	18.8
55-59	28.5	25.0
60-64	36.7	30.7
65-69	40.4	38.1
70 and over	54.1	

The very young were hard hit in both cities. We have all heard the plaint of young people in times of scarcity of work that potential employers demand experience, yet "how can we get that experience?" Older people likewise show a progressively greater difficulty in securing and holding permanent places, for lowered any demonstrated deterioration of abilities. (This is an extremely important point, but cannot be discussed in detail. Let us merely point out that if a company goes bankrupt and a competent 55-year-old worker is cast loose, it is only prejudice which prevents his being taken on by a similar concern.) But we see that in the long range of middle ages, 25-55, there is virtually an even line of employment. Youth is a factor in maintaining morale; they were found to overcome obstacles in struggles toward improving conditions, which would suggest by implication that older persons *lost their morale and gave up the fight more easily (28).*

G. Education

In terms of schooling, employables on relief totaled:

None	13.8 per cent
1-4 grades	25.5
5-8	48.2
9-12	8.5
13+	1.0

But such figures need to be compared with the education status of all adults. In the Minnesota studies, employed women clerical workers averaged 12.0 grades, while those who were at the moment unemployed had averaged 11.4 grades of schooling. All in all, education and permanent employment show only a weak positive correlation. But it appears in general that college graduates have less difficulty than high-school graduates, and the latter in turn are better off than those whose schooling stopped with the grades.

Surveys of transients showed that they have had below-average schooling but are not far below average in intelligence, some even testing high enough to prove capable of assimilating professional training (*4*).

H. Intelligence and Achievement

Intelligence and achievement test scores give information in addition to the simple figure of the number of years of schooling. They show aptitudes and accomplishments. Andrew and Paterson (2) quote average test scores for employed and unemployed women clerical workers, as follows:

Measure	*Employed*	*Unemployed*
Grades completed	12.0	11.4
Pressey Classification Test	68.8	58.8
Pressey Verification Test	68.8	60.7
Minnesota Number-Checking Test	145.1	132.8
Minnesota Name-Checking Test	150.9	131.1

The two Pressey tests are used as measures of academic aptitude, but they possibly involve somewhat more learning than do many

intelligence tests, which is probably desirable with these groups. The Minnesota tests are, as the names suggest, clerical-aptitude measures. One sees that in all four test comparisons the unemployed earned distinctly lower scores than those who have retained their positions. The differences are highly reliable statistically. Although education and experience are little different in gross quantity, there is considerable difference in what the two groups profited from their contacts.

Another study of nearly 20,000 transients (24) showed that: "Most are not interested in what formal school has to offer, are slightly below average in academic ability, have had very little more than elementary schooling, are largely unskilled or semi-skilled workers, and are in surprisingly good health."

I. Sex

Sex is another minor factor, the Buffalo and Lincoln surveys showed. Figures for the two sexes were almost identical, in terms of full-time, part-time, and unemployed workers. However, it is possible that since the majority of adult women do not wish to work the situations are not quite comparable.

J. Race

Both in Buffalo and in Lincoln foreign-born had somewhat greater unemployment rates, and Negroes were much worse off than native-born whites. The Buffalo unemployment figures, as one example, were 28 per cent for native whites, 32 per cent for foreign-born, and 41 per cent for colored.

K. Personality

Personality failings are undoubtedly the prime source of employment difficulties, in good as well as in poor times. This is illustrated clearly in the accompanying table. We see that lack of ability accounted for only 10 per cent of discharges and 24 per cent of failures to get ahead, with the remainder due to personality deficiencies. It is important to note that most of the personality traits listed are what we might term long-time traits; that is, they are ones which cannot be discovered on a test or

TABLE 24. Most Common Reasons for Discharge and for Failure to Receive Promotion, as Reported by 76 Corporations, in Connection with Approximately 4000 People (*10*)

	Per Cent Most Common Causes for Discharges	*Per Cent Deficiencies Preventing Promotion*
LACK OF SPECIFIC SKILLS		
In shorthand	2.2	3.2
In typewriting	1.6	2.4
In English	1.6	5.2
In dictaphone	1.3	1.6
In arithmetic	1.3	3.0
In office machines	.9	2.2
In bookkeeping	.6	1.4
In spelling	.6	2.7
In penmanship	.0	1.8
	10.1%	23.5%
CHARACTER TRAITS		
Carelessness	14.1	7.9
Noncooperation	10.7	6.7
Laziness	10.3	6.4
Absence for causes other than illness	8.5	3.7
Dishonesty	8.1	1.2
Attention to outside things	7.9	5.6
Lack of initiative	7.6	10.9
Lack of ambition	7.2	9.7
Tardiness	6.7	4.6
Lack of loyalty	3.5	4.6
Lack of courtesy	2.2	3.3
Insufficient care of and improper clothing	1.6	3.0
Self-satisfaction	.9	4.4
Irresponsibility	.3	.8
Unadaptability	.3	1.4
Absence due to illness	.0	2.4
	89.9%	76.5%

through a single interview. Lack of ambition, dishonesty, or laziness show only after weeks or months, not immediately. This observation suggests one serious limitation of even the most careful

employment techniques, and one which will be extremely difficult to overcome.

As to personality-test results, little of great significance appears in unemployment surveys. Interpretation is difficult in any single case, however, because, as Brentlinger (*4*) pointed out after he found that transients had higher-than-average scores on a test of emotional instability, one cannot deduce cause and effect. Is the instability the cause of dismissal, or does job insecurity cause a neurotic condition? But the study of clerical workers in Minnesota, mentioned previously, showed no appreciable differences in extroversion, dominance, and stability between the employed and unemployed, while the unemployed were distinctly more self-sufficient than the employed. This latter sounds peculiar, but possibly it might suggest that those who are less conforming and more independent are likely to run into difficulties with employers.

L. Effects of Unemployment on Morale

Not only the causes, but also the effects of unemployment are important. Months or years of going without work creates a situation far more complex than the mere passage of time. Work relief programs are said to keep talent alive, to keep one's skills from becoming rusty. But many feel that the emotional side is far more important. Continual discouragement produces embitterment, and renders the individual gradually less and less employable. Cash doles are very bad for the morale, even if less expensive at the moment than work projects. If a man receives for example two thirds of his former wage for sitting around home, he eventually figures "what's the use of working for one third of my pay check?" Such attitudes, expressed all too frequently, are the results rather than the cause of unemployment. Getting a bare living for doing nothing is demoralizing. Take the case of Horace, as reported by a relief worker (*1*):

"One day the job allocating official gave me an opening that Horace could fill without experience, yet which could lead to an established position. Horace agreed that it was ideal, but I could see, couldn't I, that if he accepted this job he could no longer take care of his sister's house. His sister had given him a home and he had cut the grass and looked after

the place. He owed something to his sister, didn't he?' He couldn't cut the grass at night, could he?"

Yet we shouldn't blame Horace entirely. Given the proper opportunity earlier, he might have proved ambitious and efficient.

Work relief is undeniably much better than the dole, but even this is not entirely adequate. If the work seems unprofitable or unnecessary, the individual cannot help but realize that he is just working to be kept busy, and that what he does is of no consequence. These suggestions were borne out in a study by Hall (*8*) on the attitudes of employed, unemployed, and "on-relief" engineers. They were asked their attitudes toward such statements as "Most companies are genuinely interested in the welfare of their employees," "Ambition is all right for youngsters, but a man gets to realize that it is all bunk," and "If I were broke and hungry, religion would not be much of a comfort." The more conservative and conformative (and perhaps capitalistic) answers were taken as evidence of satisfactory adjustment, the radical and nonconforming as indicative of loss of morale. Job security also entered the picture. Those who were employed and felt secure gave the most orthodox answers; those who were uncertain as to their future or who were unemployed but had a good amount of savings came next; in the middle were those who were unemployed but had been given work relief; at the bottom of the "morale" scale were those who were unemployed, had little financial resources, and had not been given work relief.

Students on NYA [2] who later became privately employed were surveyed and compared with others still on NYA but otherwise as nearly alike as possible in terms of education, age, sex, nationality, and religion (*21*). There was more difference in intensity of effort to secure a job than in past ability to retain one, once employed. The employed group had better family economic status, but such factors as better clothes and more money for carfare may have exercised some influence on those they interviewed and opportunities for more interview appointments. Likewise many of the employed had found work through personal contacts and

[2] National Youth Administration—a program of governmental aid for needy students in the late 1930's.

influence, and could supply more references for a hypothetical job. The employed, further, had more worth-while leisure time pursuits, and better personality-test scores on stability, self-sufficiency, and extroversion, but peculiarly were significantly lower in sociability.

So the chief danger is loss of morale. This may lead to serious extremes. One investigator reported among his findings that men who had been unemployed for a considerable length of time took as a new outlet for their activities the assuming of feminine roles *around the home, such as doing the shopping, cleaning, washing, and cooking (7). Such activities do not of themselves prove that* the man has given up the idea of a job; he may be doing these temporarily to do his part as best he can, and in some cases may represent a genuine job *until* he may become reemployed. But the effects may even lead to commitment to an institution wherein the individuals first had become unemployable due to indifference, self-justification, and permanent emotional instability. There was a gradual trend downward in scattered aims, hypochondriasis, alcoholism, and finally in complete and willing parasitism.

Following discovery of such trends, there is further evidence that deliberate effort should be devoted to forestalling unemployment. In times of active business—prosperity, war, reconstruction —there is little unemployment, and practically all of that involves persons who do not wish to work or are personally virtually unemployable. But it is felt that when the business cycle does *produce some extent of unemployment, the same unhealthy repercussions* will ensue as have been seen previously. Morale refers not *only to employment, but also to education, vocational training,* use of leisure time, marriage and the home, physical fitness, and citizenship.

Other repercussions, on skill itself, are that older persons are *likely never to be reemployed,* workers of any age may become rusty, and apprentices may not be trained. This latter factor was found between 1935 and 1938 in the automobile industry, which began to recover earlier than most other large industries, due probably to attitudes toward progress, originality, advertising, and

sales pressure. After a few years of reduced payrolls, such specialists as electricians and seat upholsterers simply were not available.

M. Summary

Let us try to draw together these many threads. As Dearborn and Rothney (5) point out: "Throughout [our survey] one short sentence appears after a great majority of the studies of the differences between the characteristics of employed youth and those who had failed to secure regular employment. That one sentence, 'The differences are not statistically significant,' characterizes most of our findings." In other words, there may be *trends*, but never *certainties*. However, in connection with almost every topic there is the trend that the unemployed and the irregularly employed are inferior to the employed youth in the traits studied. No combination of training and excellent personal characteristics can guarantee immunity against unemployment; also one might still hold a job in spite of lack of education or specialized training, and in spite of certain traits which are usually considered undesirable. But we can say that one's *probabilities* of working regularly at a good job are enhanced if he is between 25 and 50 years of age, is not too far from his home community, is a native-born white (which of course is not in his hands), and above all if he can get along with people. But remember that each of these is only a trend, and in many cases involves only a weak correlation.

Hoopingarner similarly gives reasons why men succeed or fail: (1) ability to get along with and deal effectively with people; (2) planning one's life; (3) continuous personality improvement; (4) self-analysis, ending in one's own vocational choice; (5) factors contributing to failure are much more easily identified than those which make for success (9).

V. Occupational Trends

Occupational trends are important to study if a person is about to commit himself to an occupation for four or five decades to come. He will naturally wish to select one which is on the upgrade or at least will hold even, and avoid one which is on the decline. If the demand is becoming less, as for teachers of Latin and Greek

or for streetcar motormen, or if machines are replacing workers, one is risking unemployment at a future time. Also it is well recognized that the older one is, the more difficult it is to readjust. Secondary effects may complicate the situation. Although people now have a greater tendency to seek medical assistance than was the case a generation ago, the number of doctors per thousand population need be no greater, because automobiles and improved highways have greatly increased the number of daily calls a doctor can make.

Let us list in rapid fashion a number of factors to consider about the future possibilities of any vocation one may be considering.

1. Study trends of the past few years or decades to see whether the occupation is gaining, remaining steady, or losing.

2. Watch for a saturation point which may precede a drop, or at best will provide openings only to replace retirements or deaths.

3. Study possible mechanization; even though consumption of products be increasing, this may not provide opportunities for new workers.

4. Note local as well as national trends. While as many people wear shoes and while as much cotton is used as formerly, these two industries have moved from New England to the Midwest and the South, respectively. Such trends will affect the plans of young people in each section of the country.

5. Rate of turnover in an occupation affects the likelihood of finding employment. In city stores, for example, the average salesman remains only about six months. Hence, a department with a dozen clerks should, by the law of averages, have an opening within two weeks.

6. Age of present workers likewise gives an index of future possibilities. A new industry, such as radio or air conditioning, attracts young workers, and if it hits a plateau, the only opportunities are retirement, death, and resignation, which will be much less than in an older field. If the "veterans" in a field are still in their 30's and 40's, not only is employment likely to be relatively scarce, but promotion will be extremely slow.

7. Try to ascertain the active labor surplus. Obviously, if there are few trained workers available one's chances will be that much better.

8. Watch for trends involving such factors as sex, age, race, religion, which may produce favorable or unfavorable treatment.

As concrete illustrations of actual trends, let us inspect two charts which deal with trends of occupations in general, and with professional groups in particular, which latter should be of special interest to readers of this book. In each case one can compare the trend of any given occupation with that of the total of general trend. An occupation obviously would be more promising if it showed a steeper rate of increase than does the general average. Clerical service among general occupations, and engineers and nurses among the professions are examples. On the other hand, agriculture and the ministry are relatively at a standstill.

Although this problem is of great practical importance, we must let it go with these few suggestions. Vocations are so varied and complex, and national, regional, and local trends vary so much that specific recommendations at any moment are impossible. Furthermore, no prediction into the future can be more than a fairly intelligent guess, susceptible to unexpected future inventions and changes in economic society. Therefore, it has been strongly urged by guidance experts that one prepare himself rather broadly, so that he may enter, or transfer at a later date, into any one of several occupations. One who is too highly specialized risks being cut out entirely. The writer recently encountered a young man whose one aptitude seemed to be cutting bassoon reeds! How much demand for his services could he expect to find even in a fair-sized city? Also the story is told of an attractive Finnish immigrant girl who admitted that she couldn't cook, sew, or take care of children, but she could milk reindeer!

To mention a few other examples, demand for certain foreign languages may decrease with shifts in educational policy, commercial openings, and prejudice for or against certain countries because of wars. A language teacher, therefore, should be prepared to teach more than one language, to transfer to history or literature, or even to step outside of the teaching field, to protect himself against unexpected future changes. The same is true in the skilled trades. When may coal furnaces become obsolete? Who knows when airplanes or some new form of transportation may

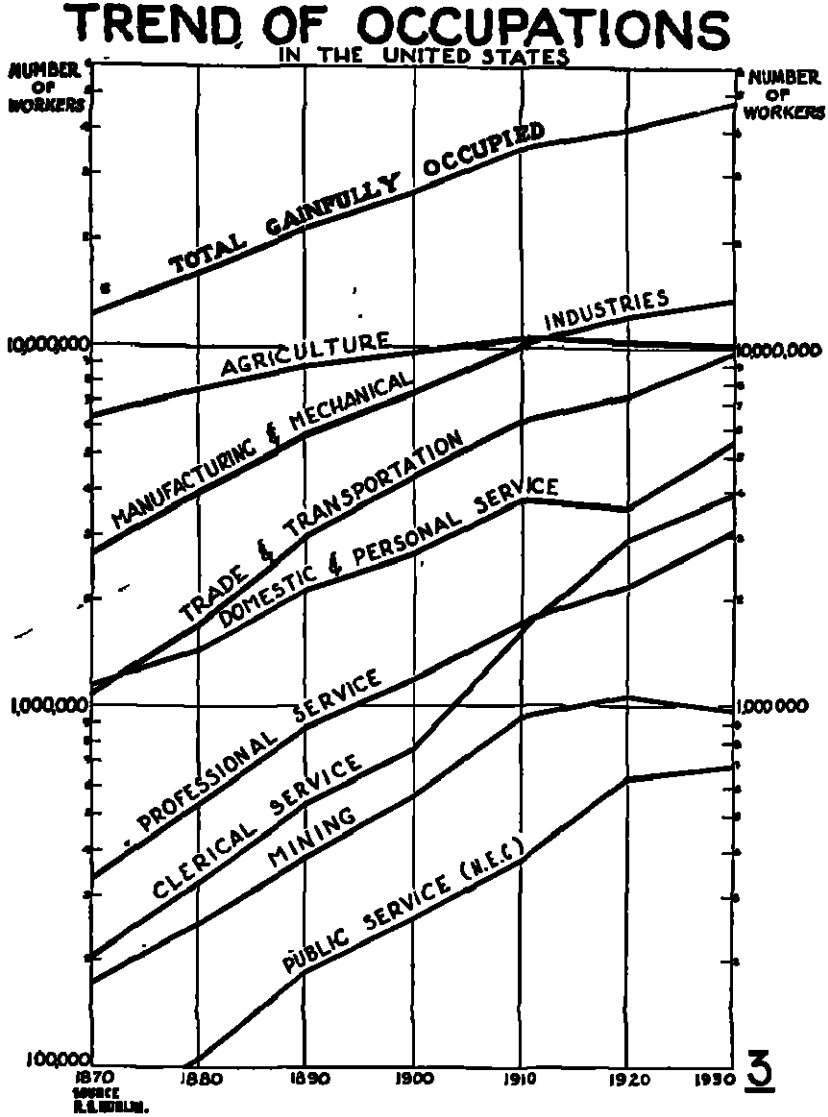

FIG. 8. Occupational Trends in the United States. (From W. V. Bingham, *Aptitudes and Abtitude Testing*, Harper & Brothers.)

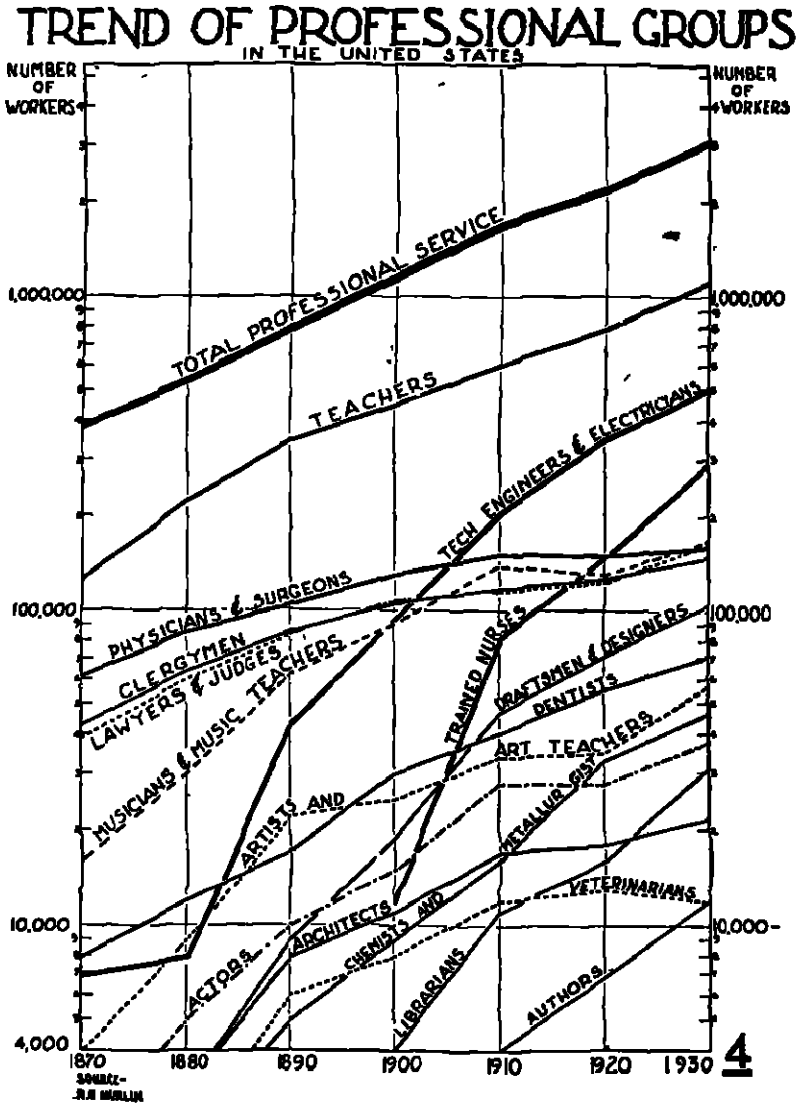

FIG. 9. Trends of Numbers of Various Professional Groups. (From W. V. Bingham, *Aptitudes and Aptitude Testing*, Harper & Brothers.)

lessen demand for automobiles, just as automobiles drove out the horse and buggy and railroads rendered canals obsolete?

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CHAPTER VII

GETTING A JOB

I. Introduction

In this chapter we wish to give suggestions which it is hoped will prove of assistance in securing a job. Perhaps you want some work during the coming summer vacation. Maybe you are about to graduate soon and will be looking for a permanent place. Or perhaps you have a position now but would like to find a better one.

The importance of the best possible decision is obvious. Possibly it is the most important one in life, since while one can change jobs, time is lost, and there may be incurred a sense of failure if one has made an unwise choice. It has been said that choice of vocation is even more important than choice of one's marriage partner, but attempting to evaluate this remark is pretty risky.

We shall give a number of hints. These are not pulled out from thin air, but have been culled from many articles and interviews by vocational-guidance experts and with employment managers in large industries. The latter should be particularly appropriate, since they actually interview and accept or reject applicants, and hence they know what traits impress them favorably and what kinds of persons they do not want to place in their organization.

In addition to the brief discussion we shall introduce here, there are given at the end of the chapter lists of a number of books which would be profitable to read, and any college or public library has a list or shelf of references on getting jobs and on the demands and opportunities in many occupations.

II. General Suggestions [1]

Counselor: Just this morning a student came into my office to ask a few questions about looking for a position after graduation. His questions were so interesting and right to the point that I persuaded him to come with me to the studio and ask them over again. He will break in once in a while and ask things he has been mulling over; and I am sure that many of these same problems have occurred to you also.

Student: Can you suggest a few general points that I should keep in mind as I prepare myself to look for a job in June?

Counselor: Yes, there are several. First, you must keep in mind all the time that no one is going to hire you because of sympathy, or just because you need a job. Put yourself in the employer's place—would you employ someone who came in whining and complaining because he was broke and needed a job? Well, avoid giving this impression yourself. You can give the impression of being eager and earnest, but do not act beaten before you start. The you haven't-got-a-job-for-a-hungry-man-have-you? approach is bound to meet with failure. Remember that any business concern must earn at least a modest profit to keep alive. To make this profit, it must have efficient workers. So, sell your potential contribution, not your sorry plight.

As a second general point, before you actually apply for a job, analyze seriously the type of work you are considering. Vocational-guidance experts and industrial psychologists are realizing more and more that enjoyment of one's work is paramount to success in it. One might say that life is two thirds work. Discounting eight hours of sleep, one works eight and perhaps spends another hour or two going to and coming from work. Taking out other routine time spent dressing, eating, etc., there are left only two or three hours for recreation and other personal affairs. Hence if you don't enjoy your work, life is perforce very empty. Financial consid-

[1] The general contents of this chapter were originally presented as a radio broadcast over the University of Wisconsin station, WHA. Mr. C. H. Ruedisili, then a graduate student and now Associate Dean, acted as the student inquirer. The interview form of presentation, as used over the radio, appealed to listeners as so vivid that it has been preserved for this chapter.

erations are far from being the most important aspects of life. Of course, it's all fine to have big cars and a large house and expensive clothes, but to most of us the difference between a decent living at something we can enjoy and luxury at distasteful work is immeasurable. That's why some musicians and artists live in actual poverty; they are so wrapped up in their work that they are willing to endure definite privation. This is the motivation in back of entering the relatively underpaid "service" occupations, such as the ministry, teaching, or social work.

Student: That's a good point to think about. I'm afraid too many of us think too much of a job in terms of money alone, and not enough of the nature of the job. But just how, precisely, should we go about sizing up a possible position?

Counselor: There are several ways of acquainting yourself with a particular job and a particular company. We can make a good start by reading selected articles about the vocation, which you can find in the library; talking with successful people in the field of venture you are contemplating; and visiting factories, stores, or business houses.

But of even more practical value is actually *trying out the vocation.* By doing so, you can make sure that you will not be disappointed later by finding conditions different from expectation. We have already mentioned (Chapter II) two or three of the following cases. A boy wished to become a baker, took a six-weeks course, and when he finished it he was sent to interview a potential employer. Negotiations went along very smoothly until the employer said, "All right, then, report at eight tonight. You will work from then till five in the morning." The boy was much taken aback, and expressed surprise at the unusual hours. He was informed that practically all baking in the city went on at night, since the customers expect fresh bread and rolls in the morning. It was too bad that he had gone on that far before he discovered this occupational condition which was so much to his dislike. To others night work would not be so prohibitive to happiness. This case illustrates the necessity of acquiring first-hand information about *all* phases of an occupation.

Even thorough reading or inspection may not disclose all the conditions; this is why we emphasize so strongly the actual voca-

tional tryout. For a student's future it is far better to find summer or vacation work among possible permanent vocations than to work as a waiter or a lifeguard at a summer resort. I have seen friends try out different vocations, with varying results. One worked two months one summer in an architect's office, for no pay—he even paid for his own lunch and carfare—and decided not to make a life's career of the duties that arose there. Another did dirty work around a hospital to see if the less spectacular phases of medical practice would not be too distasteful to him, and he found that they were not. He now is a brilliant young doctor; and he revels in work that perhaps you or I might not like. The tryout may enable one to choose between two or more possible occupations. One individual had always thought he would ultimately go into some form of business, and so he worked in a large city store following each of his four years of college. The experience convinced him that he did not truly like that kind of work. About the same time he became interested in college teaching, made the decision, and found himself very happy. He found that to him teaching was genuine fun, and what more can one ask? A leading question to ask oneself might be "Would I follow this line of work if I suddenly became independently wealthy, and had my choice of what to do and where to live?"

Student: Your suggestions sound fine, but they set me wondering if they might be chiefly useful if there are plenty of jobs available, and all of us graduating seniors had a more or less unlimited choice. Suppose jobs are rather scarce; how will this change our plans?

Counselor: That's a sensible question, and I must admit we have to face the practical as well as the ideal.

We must admit frankly that things are often tough. Frequently there are more people looking for jobs than there are jobs available. On the other hand, there are always people retiring, dying, or changing positions. Accordingly, there must be new jobs for some people; why not you? Why let the other fellow get them? He may be no better than you, except perhaps in that he has shown himself more enterprising and more ambitious.

Perhaps you can even create a new type of work. Popular magazines are full of stories by people who have devised their own

vocations. Maybe you cannot copy any of these directly, but reading a few of these accounts will set one's imagination working.

Several magazine articles entitled "Father Meets Son" have been written by Mr. J. P. McEvoy. One particularly struck my attention. The father had received a letter from his son saying how things had changed, that twenty years ago it was easy to fall into a lucrative position, but that now conditions were different. Part of the father's reply read:

"I'll grant you there are more people looking for jobs than there are jobs available, but has it ever occurred to you that new jobs are being invented all the time by bright young men and women who realize the hopelessness of looking for jobs, many of which have disappeared forever? The blacksmith's son is an auto mechanic. If his son discovers there are too many auto mechanics, he should realize that television is around the corner and start doing something about it. If there is one thing that is typically American, it is the desire for change. The paint is hardly dry on a building before we tear it down and put up a bigger one. Most of the time we don't even stop to raise the mortgage on the first one—we just slip the other one under it. While the workmen are finishing a two-lane road, another gang is at the other end, tearing it up to make a four-lane one. In your own short lifetime you have lived through a complete revolution in transportation, communication, industrial and rural development, city planning, public welfare, medical science, mass entertainment, and politics" (2).

This rather lengthy quotation suggests, then, that one should use his imagination. It is not enough to *follow* the parade if one wants to get ahead. *Lead* the parade. Show the boss something new. Naturally, as young people we can't revolutionize the boss's business right off. One will have to fit in with the general ways the business is being run, as those methods must have worked well for a good period of time. But seemingly small ideas have effected many thousands of dollars' worth of economics or increased production, and certainly any display or originality will do one no harm.

One last bit of general advice is not to give up a job in order to look for a new one. If you have one now and want to find a better one, find it and then resign the first. Your having a position will give the interviewer a more favorable impression of you, because you show you can and are willing to work, that another

employer considers you worth keeping, and yet you want to get ahead. If things are tough, even a mediocre position is better than none. You are showing that you are doing your best in the face of adverse circumstances, and that you are not of the whining and complaining sort.

These brief suggestions naturally only skim the surface. We could spend many hours talking about how to choose your vocation. But we must get back to our principal topic, that of securing a job, once the occupation has been selected. (Certain other suggestions on choosing among various possible vocations have already been presented in Chapters II-VI, which deal with guidance, intelligence, personality, interests, and aptitudes.)

III. Application

Student: May I ask another question?

Counselor: Certainly; break right in any time.

Student: Should I look for a job near home, or would I have a better chance if I went to some large city?

Counselor: Experts usually advise young people to stay near where they are known. It has been said that one's chances of getting a job decrease as one goes farther from home or from known territory. Of course, there are some exceptions. If you live in a small town, and there are no worth-while openings, you may want to try in a larger place. Those in Wisconsin or California might try Milwaukee or Los Angeles, respectively, since one knows the state and the city, but going a long distance away is likely to prove a wild-goose chase. Remember, too, that there are thousands of people just like yourself who are fascinated by the idea of a big city and are walking the streets looking for any kind of work, without definite ambitions or any prospects.

An exception to this is where you have connections. If you or your family have close friends in a city, especially if they are associated with a large company or some profitable business, and if they are willing to help you, it may work out for the best. But it would be sensible to write first to see what the prospects are.

Student: What you just said suggests another question to me. Should I try to get a job through friends of my family? In other words, should I use any drag I can?

Counselor: That's a very interesting question, and I am glad you brought it up so squarely. But I must hedge a bit. My answer depends on how you mean the word "drag." If you mean trying to get something you don't really deserve on your own merits, the answer must be "No." But if personal friends can help you better to secure a position than if you were an utter stranger, it would be foolish to pass up such an opportunity. We must distinguish between this kind of help and the nepotism of which we hear, where say a politician may secure for half a dozen relatives soft jobs for which they are unqualified. But if you apply to a friend or have a letter of recommendation from someone known to the prospective employer, you will be likely to get fuller consideration and perhaps will be chosen from among several candidates of equal ability. And after you get the position, closer attention may be paid to you and you may have a better chance to receive later promotions than would those who entered as complete strangers.

Student: How should I go about seeking a job with a company, once I have decided I would like to be associated with it?

Counselor: There are two principal ways: applying by letter, and applying in person or by telephoning for an appointment. If by letter, there are a few things that should help your chances. A letter by itself rarely gets a job, but it should serve as a means of introduction which will provide information about yourself and give a head start when you later come around in person.

Take a good deal of pains to make the letter the very best you can write. You may want to write and rewrite it several times before you are thoroughly satisfied with it. Show it to a friend, a teacher, or your parents, and ask for criticisms and suggestions. It should not be over a single page in length, so make every word count. Start right off with a strong punch. Don't use such a trite statement as "Your advertisement in the daily paper came to my attention." Make a strong opening sentence. If you can find nothing especially original, at least plunge directly into the middle of the point, somewhat as follows: "I wish to apply for a position as accountant in your organization. My experience and education are as follows. . . ." Thus there will be no doubt as to the purpose of your letter, nor why you feel competent to apply for the vacancy.

Student: Should I mention definite facts, such as my education and my previous work experience, or would it be better in this first letter to be more broad and general?

Counselor: By all means be specific. For example, don't say "I am well educated," but specify the exact extent of your education, such as "I graduated from Central High School in Chicago in 194–," or "I expect to graduate from the University of —— in 195–." If you cite previous working experience, quote the exact name of the organization and the exact years and months you worked there. These suggestions may sound obvious enough, but you would be surprised how many people make errors on such simple facts as year of graduation, dates of employment, and even their own telephone number, not to mention simple spelling errors. Of course, you say, "*I* never make such mistakes," but you may very easily. Avoid such errors; it takes only a few minutes to proofread and verify.

If you have secured an interview by telephone, you will assist the interviewer if you prepare and hand to him a typed outline of your training, experience, and ambitions. This will enable him both to guide the interview expeditiously and to furnish later reference.

Student: Should I typewrite or write this letter by hand?

Counselor: Type it by all means. It is for business purposes, and all business letters are typed. Also, type it on business-size stationery. Small correspondence paper or colored paper won't be received well.

Student: Shall I enclose a photograph of myself?

Counselor: In light of our previous knowledge of the lack of relationships among intelligence, personality, and facial appearance, that question is a little embarrassing. You and I know that they can't tell much about you from a picture; but many employers think they can—and they often like to see in general what sort of a looking person you are. But ordinarily this is not called for until you fill out the company's formal application blank.

Student: How about using business stationery, with a letterhead?

Counselor: That depends upon whose it is. Of course, don't use some from a hotel or railroad or company with which you have never worked. But if it is that of an organization with which you

are connected, it is not only all right, but will add to the favorable impression of yourself. For example, if you have been on the staff of your school paper, or the YMCA, or other organization, the letterhead gives evidence that you have been a leader in some outside activity. If your name is on it as holding office, so much the better; if not, type your name under your written signature and on a line below that put the word President, Secretary, or whatever title you may have held.

Student: A few minutes ago we spoke of the letter of recommendation. Should I send one or two of these in with my application?

Counselor: These are useful, but usually not at this stage of the proceedings. Employers usually prefer to have them mailed in separately or at their own request, using names you yourself suggest. I would like to warn you against having an old friend write a to-whom-it-may-concern type of letter, because there may be suspicion that it may have been written in your presence, and also because it will usually be too general. It has to cover too much area in shotgun fashion, and does not tie up your abilities with the requirements of the particular job. I know from my own experience that I find myself writing a relatively lukewarm letter in behalf of a former student or a graduating senior for a position for which in my opinion he is not highly suited, and a highly enthusiastic letter for the same individual for a different position.

I might interject one more thought. When you spoke of taking a letter with you, I got the idea that you were thinking of just appearing for an interview without an appointment. While this is done, and may be done, it is more businesslike to request an appointment in advance, and you may save yourself a great deal of time otherwise wasted in waiting around. And it will suggest to the interviewer that you have singled out his organization as one with which you would like to be associated, rather than making a practice of appearing in every employment office you might see.

Student: Whom should I ask to write letters of recommendation?

Counselor: Since you will be applying for a working position, the letter will mean most if it is from a person who has known you in a working situation, say a former employer or a teacher. If you have never worked regularly, perhaps you have worked dur-

ing a summer, a Christmas rush, or on Saturdays. Such people as your minister or a prominent citizen may be all right, but they are likely to know your parents better than yourself, and are not familiar with you in a working situation.

One more word of advice—if you apply for a position and names for references are requested, it is considered only a part of good manners to tell or write those people that you have taken the liberty of using their name. Failure to do so is really discourteous and their letter in response may not be quite so enthusiastic as it otherwise might be. Also, if you tell your sponsor the nature of the position for which you are applying, his letter can be made that much more appropriate.

IV. The Interview

Student: Well, Mr. Counselor, you have certainly given me a lot of useful suggestions. As I have thought about it before, I always find myself more worried about the actual interview than any other part of the employment procedure. Maybe you can give me some more pointers. I seem to get a feeling of nervousness when I think of the interview. I think especially of all the unexpected questions they may ask me.

Counselor: That is one of the most important questions you have asked, and one of the most important aspects to getting a job. A little nervousness in an interview situation is only natural, and the interviewer will appreciate this and be perfectly sympathetic. He won't be trying to trip you up, but merely must make sure you will fit into his type of work. One thing I would suggest strongly, a thing which few people actually do, is to *prepare for the interview.*

Student: How can I? How can I tell what he is going to ask me?

Counselor: That really isn't so hard. To begin with, he is going to ask you about yourself. Who knows more about you than you do yourself? So, sit down and think about yourself, your experience, your training, your assets. Then, reverse the situation, and imagine you are the interviewer. What ten or a dozen important questions would you be most likely to ask an interviewee? What can you do well? What do you like or dislike? How are you fitted for the job

for which you are applying? I'll wager you can anticipate at least three quarters of the questions that will be asked.

It is also very important that you study the business before you apply. Find out what they manufacture or sell, what the size of their operations may be, what class of people they deal with. If you possess definite knowledge, the interviewer will be favorably impressed and will realize that you are devoting pains to securing a position—and not merely hoping to find "any old kind of work" by "ringing doorbells." And from your own standpoint, try to find out all you can about what sort of a company they are to work for. Talking to employees, former employees, and others who have dealt with the company will give you the best information. You will hear the usual "gripes," but discount these to some extent, but if you hear the same thing from several people they may have a point to watch.

Student: Should I work on one job at a time, or try for several?

Counselor: Unless you are holding a fairly good position at present, one that you wouldn't mind keeping, the more irons in the fire the greater the likelihood that you will find a desirable position quickly.

It has been recommended that you make a *full time job out of looking for a job.* With a single application, you won't have much to do—you will write a letter, have an interview, and then sit around waiting for a letter giving their decision or inviting you for a second interview. It won't lessen your chances with the first company if you say that you also have other irons in the fire, or are employed at present, if a question should arise as to what hours you are available for an interview.

But if you do say that you can come, if called, at a certain time, be sure you can do so, and plan to be able to keep those hours. If they call your home and your family reports that you are out of town or bowling or playing golf, it won't sound well, and they probably won't call you a second time. It will appear as if you are only half-heartedly seeking a position. If you do have to be away, let your family know where you can be reached quickly, and be near that spot in case a quick interview comes up.

And when you do go, *get there on time.* If a person can't even apply for a job on time, how punctual do you think he will be

day after day, when there isn't quite so much at stake? Maybe you will have to wait for your interview, but remember that you are the one whose duty it is to make the good impression, not the employment manager.

One last word. Go around alone. If you arrive with a parent, it looks as if you are too immature to hold a job of your own. Even if you are rather young and your parents have helped arrange the interview for you, it will make a poor impression if mother or father goes around with you. After all, it is you who hopes to be hired, not your family. Also it is bad to go around with a school friend. Job hunting is a serious business, and cannot be mingled with social pleasure. If two friends wish to work for the same company, they should apply separately, or both may lose out if there is a place for only one person.

Student: Should I get all dressed up, or should I wear the kind of clothes I would wear to work later, if I am employed?

Counselor: Wear the best clothes you can, and look the best you can—within reason, of course. Naturally, you don't want to look as if you were going to a dance or a formal affair, but wear the best suit or dress that fits the occasion. After you have the job you can wear more everyday clothes, but make the best possible first impression. As to personal appearance be sure to be neat and clean. Be freshly shaved, have a recent haircut, shine your shoes, have on a clean shirt and a pressed whole suit, and a good-looking but not too flashy tie. You may have seen a recent advertisement which read as follows: "$2500 for a pair of garters." The advertisement goes on to tell that a man lost a business deal worth that much because his socks hung down. Whether this is a true case or not is not important; but there is food for thought. I also want to emphasize that such things as clean linen and a shoe shine are much more important in business than on a college campus. Were it not for the many blunders that do occur, it would hardly seem necessary to tell you not to chew gum or smoke a cigarette, unless the interviewer specifically asks you or offers you one, which he probably will not.

Let us bring out a few more tips about being interviewed. We have already pointed out that one of the primary duties of the interviewer is to set you at your ease and thereby bring the best

out of you. It would be utterly wrong to frighten the applicant. On the other hand, the more natural he can make you feel and act, the better he has done.

During the interview the interviewer is sizing up your appearance and your behavior as well as obtaining facts. Many of these facts can be obtained as well through an application blank, so the time spent on them in the interview is to see *how* you behave, as well as *what* you say: For instance, a very important question is why you wish to work for this company, or why you want to (or did) leave the last one. Be very careful to avoid criticizing your last job. It is one thing to want to better yourself, and another to tell how horrible the other organization is, how mean the boss was, or how little he knew about the business. You may not realize how badly this sounds, but if you could overhear another interviewee launch such a tirade, you would soon appreciate the poor impression it makes. The interviewer will wonder how long it would be before you started talking about his organization in similar vein. Chronic complainers and those likely to contribute to a high turnover rate are shunned like the plague.

Student: How should I act? Are there any special things I should avoid?

Counselor: Your own sense of good manners and the fitness of things should take care of this. But I have seen some horrible examples, such as an applicant calling an interviewer by his first name after hearing someone in his office do so, or try to show sophistication by kidding the receptionist, or putting in personal calls over the office telephone, or picking up and reading letters from desks.

Likewise, watch your language. It will do you no good whatsoever to use the latest slang, or plain poor grammar; and real harm may be done by not confining oneself to proper English.

These may be little things, but they mean a great deal in the impression you create. Make sure *you* don't make such mistakes. These hints which we have just brought out in the last few sentences may sound too obvious to devote this time to them, but let me assure you that I have seen too many instances of high-school or college seniors with good ability and good school records, but whose appearance and conduct during an employment interview

lost them their chances. In the event you may be invited to lunch with the interviewer, watch your table manners carefully.

Student: How particular can I be? Should I take a job which doesn't suit me in all particulars? How much money should I ask?

Counselor: No single or final answer can be given to these questions. But I would suggest that you keep in mind the thought that it is not an act of charity to be offered a job; an employer would not give you the offer unless he thought your services were worth that much plus a certain margin of profit. Unless you are hard pressed financially and see no other opportunity in the immediate future, I would urge you not to accept a job that you feel is much below your worth.

You should put a fair price on your services, to be determined by your training and experience and the "going rate" in the community. Ascertain these factors first, as you may be asked point-blank what monthly salary you expect. No matter how anxious you are for a job, do not underbid for the purpose of securing it. Most sound concerns are willing to pay an appropriate amount for one who can fill the position as they have defined it, and a man willing to come for a lower price not only will harm his own financial future, but is really evaluating himself as mediocre.

Student: What should I do if I do not receive an answer a few days after an interview?

Counselor: I would follow it up perhaps a week later, and if in your judgment it would be a good idea a week after that. Making a brief call in person is a little better than by phone; it will keep your name fresh before the company, and show your interest and eagerness to become associated with it. But make these follow-up calls brief; oftentimes a single sentence or two will suffice.

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CHAPTER VIII

COLLEGE PERSONNEL

I. Introduction

Many colleges are showing recognition of the desirability of all-round student guidance, not only along purely scholastic lines, but also toward extracurricular activities, social and personal adjustment, and placement and follow-up work. In contrast, many industries tend to consider personnel problems more in the light of mass statistics. But in colleges a more enlightened outlook is being taken, and it is realized that each failure is an individual tragedy and each success is a source of pride to the student and his family.

Even though the fields of education and industry seem very different, their fundamental problems have close parallels. Admission and employment, teaching and training, advancement and promotion, dismissal and discharge, handling student and employee problems, all have similar purposes. What, then, are the principal purposes of colleges?

II. Objectives of Colleges

A comprehensive and precise statement of the aims of personnel work in colleges is contained in this statement by one of the earliest workers in the field of college personnel:

"A personnel office in a college exists to further among students the objects for which the college itself stands. When the exact purpose of college education is clearly defined we can see clearly, also, the purpose of a personnel office. The colleges of law, medicine, engineering, forestry, and others have as their objective a competence in well-defined fields. The

college of liberal arts stands apart from these in the fact that its aims are not quite so narrow nor so tangible, but its purpose can nevertheless, be clearly stated The latest declaration on this point defined the aim as that of 'giving its students the body of knowledge, the training, the impetus which will enable them and lead them to think clearly and justly on the questions which touch our common life'

The colleges set as their standard the training of students to take an effective place in their environment after their college course is completed They are, therefore, concerned in the development of students in all parts of their being which will be brought into play when they pass from the college itself They are interested in the intellectual, moral, and physical improvement that is possible during the four years of a college course A personnel office is concerned in all these matters" (9)

We must, then, define the principal objective of colleges and universities These four are most commonly mentioned (1) general education and mental training; (2) vocational preparation, (3) aesthetic development, (4) training for citizenship

1. *General mental training* is perhaps the oldest and most prevalent idea It is the basis of required courses, which assume that one must take at least one science, one language, one history, and perhaps one or more additional courses "to develop a well rounded mind." The idea sounds fine, but it can't be demonstrated that chemistry makes a girl a better cook, nor mathematics a better and more precise thinker out of a boy.

2 *Direct vocational preparation* is undertaken by fewer than half of students in colleges and universities. The value of such *curricula is undeniable, although it has been criticized on the* basis of being limited in aesthetic and citizenship training.

3. *Aesthetic development* is a third possible objective of college training. Certain emotions may be undesirable, but we will not deny that it is advantageous to enjoy music, art, poetry, and literature Since most of the girls will be married within a few years and many of the men will enter business in fields for which college training will not have much direct value, the curriculum should be planned in terms of the future of the majority of students.

4. *Citizenship,* in duties as well as privileges, is shared by all college graduates with those of lesser education, and, of course,

regardless of the curriculum undertaken in college. Especially in state-supported colleges, the commonwealth has a right to expect some return from its investment; graduates should become leaders of their communities. Social-science courses, especially those in American history, political science, and economics, can thus enrich his training.

It is not our desire here to say which of the four purposes listed above is the most important. All have definite value, and some colleges emphasize one, while others lay stress on another.

III. College Personnel Functions

Another reason for an organized college personnel system is that college serves as a transition from the rather complete domination by teachers and parents while in high school to the relative freedom in college. One must make most of his own decisions, although he does have some regulation. In large universities, which lack much intimate personal contact, definite efforts must be made to establish some semblance of personal touch.

With this discussion comes the problem of how the college personnel bureau should be organized. It is our recommendation that there should be a centralized bureau, with the entire faculty and administration cooperating. A very minute percentage of the total budget will support the central bureau, but all functions cannot be relegated to it. Each faculty member should recognize the importance of individual counseling on the part of those who know the student best, and consider this as a duty as much as teaching his classes. Regardless of the expertness of those in the personnel bureau, faculty members who have known a student well for some time will be better able to give sound guidance than can someone who has never seen the individual before a scheduled fifteen-minute conference. Such guidance will apply especially to decisions on strict or sympathetic enforcement of scholastic or disciplinary regulations.

All this, then, suggests two forms of guidance, one on the part of a faculty member who knows the student well, and the other on the part of a trained and experienced counselor who is thoroughly conversant with the problems and techniques of scientific guidance. The two ideally supplement each other so that a complete

picture from all available angles can be built up and the student can be given the best possible all-round guidance.

Let us outline in skeleton fashion the major functions of a college personnel department. These will be discussed throughout the remainder of this chapter.

1. Admission: selection of students most likely to succeed.
2. Orientation:
   a. Freshmen, at time of entrance.
   b. Efficient study habits.
   c. Mental hygiene; emotional problems.
3. Elimination of waste, through straightening out potential failures, disciplinary and problem cases.
4. Curricular guidance, adapted to the individual's needs.
5. Preparation for life:
   a. Vocational, direct.
   b. Vocational, indirect—general mental training.
   c. Contacts with industry.
   d. Cultural, social, and physical development.
6. Research, to improve methods of handling the preceding five major classes of problems.

IV. Methods of Admission

As in industry, we wish to make up our group of entering freshmen from those who seem most likely to succeed. A decade or two ago fewer individuals desired higher education than at present, and the desire could ordinarily be taken as evidence of ability to profit from it. But with college education becoming more in demand and more fashionable, unselective admission brings about several sources of waste.

1. Some potentially very worthy students may be prevented from getting into college if their places are filled by others of poorer grade who chanced to apply earlier.

2. The university endowment fund or the taxpayers' money is wasted as long as unworthy individuals are in attendance. It is well known that each student costs several times the amount he may pay in tuition, so the university and society in general have a

right to demand a satisfactory performance on the part of each person in whom it is investing.

3. Dismissal of a student who has been accepted into a college community involves the same elements of waste that discharge causes to industry.

4. Poor students retard class work for the length of time they are in school, as well as wasting their own time, their parents' money, and chalking up a failure on their record, which may not only make subsequent education or employment that much more difficult, but may also have unfavorable personality effects.

5. Finally, students of fine ability might actually in terms of interests and special aptitudes be better fitted for say an engineering or a music school, but they may not be so advised. Even at the expense of their own institution, guidance officers will advise such a student to enter a different university or a different school within the university.

It is imperative, therefore, that some sort of selective admission be devised. Each college will have to set up its own standards and particular requirements, which will depend on its particular purposes and the pressure for admission. Private schools can be more highly selective than state universities, which are dependent on public tax support and hence cannot resort to too rigorous methods. Actually, the latter admit practically all high-school graduates who have taken the required courses. Specialized schools, such as engineering or music, may likewise discourage applicants who are likely to fail.

The subject requirements for admission are fairly well standardized. English, mathematics, history, and languages are almost universally required, with other optional subjects from a specified list bring the total to approximately 15 year-courses (units). The principal variations in admission policies consist in the strictness of interpretation of what constitutes satisfactory fulfillment of these course requirements, and in deciding whether other personal factors shall also be taken into consideration.

Types of data which are used by various schools in determining entrance suitability are: (A) high-school grades; (B) college-entrance examinations; (C) intelligence test scores; (D) personal ratings.

A. *High-school grades* need little explanation, beyond mentioning that different colleges require different standings. State universities may accept a "C" average, or may in addition require a certain percentage of course grades to be higher. Private colleges often demand standing in the upper half of the graduating high-school class, the upper third, or even higher.

B. *College-entrance examinations* may be given to all applicants or in single subjects to those who are below the certifying level. These are being replaced to quite an extent by standard examinations, although they do have a certain advantage in being adapted directly to the college in question and can be administered and scored at any time.

Standard examinations are given by independent boards, with acceptance by many colleges. The College Entrance Examination Board and the Regents' Examinations given by the State of New York are examples. In the latter, all algebra or English students, for example, take the same final examinations throughout the state. As a rule, such boards do not set up any standards of passing or failing, but report to the college the numerical score of the applicant, and let it establish its own marks.

C. *Intelligence tests* are used in the majority of colleges for personnel, diagnostic, guidance, and research purposes, but a few also include them in their entrance requirements. One university weighs intelligence equally with high-school averages in determining admission. This is statistically justified, as will be demonstrated in Section V of this chapter. In addition, no one scoring below a certain minimum will be admitted, since it is assumed that his high grades in secondary school must have been achieved only at the expense of extremely hard work or other unusually favorable factors, and even these would not procure success with the more complex subject matter studied in college. An individual with a high intelligence score but poor grades would be a far better risk; at least we know that he can succeed in college.

Several colleges admit students who may be somewhat deficient in high-school preparation if they attain a certain high score on a standard intelligence examination. It is assumed that if they could make such a high score on a difficult scholastic aptitude

test they must possess a good share of the knowledge acquired in high school, regardless of where it might have been obtained.

D. *Personality characteristics* play a very important part in college success, and many universities are attempting to use some estimate of these as part of the admission procedure. In fact, some authorities have stated that more failures occur because of personal deficiencies than because of lack of ability. Some of the traits on which we might like estimates are: general scholastic promise, initiative, seriousness, vigor, industry, perseverance, regularity of habits, promptness, accuracy, social qualities, manners, respect for authority, sense of responsibility, participation in outside activities, breadth of interests, vocational purposes, health, financial condition, and past earnings.

Information on these may be obtained in a number of ways. In the first place, the applicant himself may furnish some data. Often on the application blank there is a space provided to write one's purpose in coming to college. From this we can form some sort of estimate as to whether he understands the opportunities available in and through a college education, and to see whether he thinks and expresses himself coherently. He may be asked to list books which he has read within the last year, how he has earned money, and what his outside interests and hobbies are. The high-school principal and possibly a responsible person outside the educational field can be asked for statements, either in the form of letter of recommendation, or by filling in a specific questionnaire sent by the university. Finally, the candidate may be asked to have a note concerning himself sent in by an alumnus.

The exact value of these estimates of personal qualities may be rather dubious, as are all personality estimates and measurements. It is undoubtedly desirable to ascertain certain traits, and if at present they do not seem to be perfect measures or to have high prognostic value, improvement rather than abandonment of the devices is in order. One university feels that its estimate of personal qualities is valuable enough to give it half the weighting accorded intelligence. Its scheme allows four points each for intelligence and high-school record, and two points maximum for personal traits, making a possible total of ten. Admission, then, is on this multiple basis.

V. Prediction of College Success

A. Problems

If we set up standards of admission we implicitly assume that these will predict with some degree of accuracy the subsequent performance of the student thus selected. So let us ask what items have fairly high predictive values. At the same time, since we have taken the position that education should concern itself with each individual and his particular problems, we cannot arbitrarily toss out factors which affect only a minority of students, such as load of outside work, extracurricular activities, emotional problems, health, previous background, etc. None of these latter gives significant correlation with academic success, but in certain individual cases each of them may be of utmost importance.

B. Intelligence and Grades

Fig. 10 shows the relation between mental-alertness scores and college standing (8). One notices that there are honor men and

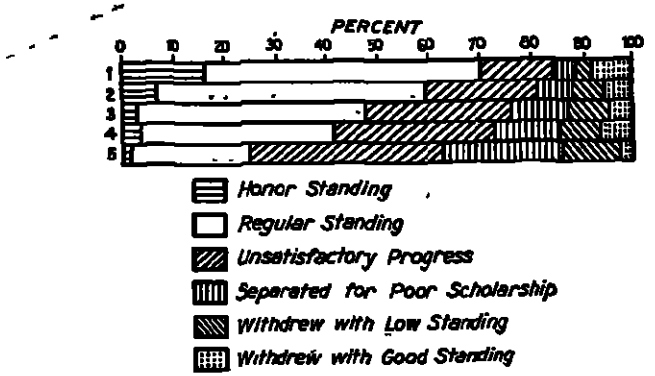

Fig. 10. Relation Between Mental Alertness Scores and College Standing.

men who failed in each of the five intelligence levels. But the proportions are not equal. Sixteen per cent of those in the top group earned an honor standing, while only slightly over one per cent of those in the lowest intelligence group had such outstanding success. It might be further remarked that study of this last group

disclosed that their high marks were almost always obtained at cost of exceptionally strenuous efforts. Of those who were separated because of poor scholarship there were five times as many from the lowest intelligence group as from the top fifth. The intermediate groups had varying proportions of high and poor standing students in graded proportions about as one might expect. Approximately equal numbers of all five groups withdrew voluntarily, although we notice that as we go down the scale progressively greater proportions were in bad standing at time of withdrawal.

C. Predictive Factors

The correlations between intelligence and college scholarship usually run about +.50. Correlations between high-school averages and university grades run very slightly higher, usually around +.55. This indicates that the two factors are virtually equal in predictive value. No other single factor is of much group importance, although they may exert tremendous influence in individual cases. These latter usually cannot be discovered during admission, but they may be of great importance in handling problem cases among students already admitted.

Now we come to the crux of admission. We have two factors: intelligence and high-school grades, both of which predict success with considerable accuracy, but far from perfectly. Suppose we combine the two? Intelligence predicts aptitude; high-school performance not only shows what one did with that aptitude, but also in effect includes certain personality factors which enter into academic success. Thus, even though the two most important scores are fairly well intercorrelated; we do obtain different information from each of them, so putting the two together should produce a distinctly higher prediction than either taken alone. Just this has been done.

Henmon and Holt (7) built up a prediction formula on the basis of college intelligence percentiles and high-school grades. While we cannot go into all the complicated statistics involved, we can point out some of the more prominent aspects. At the University of Wisconsin the correlation between intelligence and college-freshman grades was +.53 and between high-school average

and freshman grades was +.55. This denotes a virtual equality of the two as predictive measures. Using these correlations to build up a multiple regression or prediction equation, the formula[1] arrived at was:

$$X_1 = .0180X_2 + .0197X_3 - 1.1016$$

X_1 = predicted freshman grade-point average;
X_2 = college intelligence percentile;
X_3 = high-school grades percentile;
1.1016 = a constant, which factor appears mathematically in gross-score regression equations.

This formula predicts the freshman grade-point average of each student at least so long as he attends a Wisconsin high school and takes an intelligence test during his senior year. Out-of-state schools are less feasible to evaluate and without intelligence score on a standard test one can attempt no prediction. The same is naturally true with transfer students.

The high-school percentile rating (X_3) demands some explanation. Since one school may consider a 90 an A and another may demand a 95, plain numerical averages are not comparable. One's rank in class is better, so if he is first in a class of one hundred, he is at the one hundredth percentile, the second in order is in the ninety-ninth percentile and so on down. Even this device is admittedly imperfect, since one high school may have better students than another. But it is a better measure than plain numerical average, since it produces a higher correlation between prediction and subsequent achievement.

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[1] Can this formula be used in other colleges and universities? It is probable that it could, with only slightly less accurate results than in the original institution, provided their admission standards and the quality of students they attract are approximately the same. These criteria would be satisfied by the majority of colleges in the country, but would not meet the situation of some high-standard universities nor of some with notoriously low standards. The crux is whether the correlations between high-school grades, intelligence scores, and college grades approximate those we have quoted. We might suggest, however, that the task of computing a formula especially adapted to a particular university is not too difficult, so it is easily worth the effort if one plans to make practical use of these diagnostic devices. See Garrett (4) for the step-by-step procedure of building up a multiple regression equation.

Let us illustrate the working of the formula by a typical case. Suppose a boy applies for entrance and his two principal scores are the 60th percentile in intelligence and the 70th percentile in his high-school class; we would find:

$$X_1 = .0180 \times 60 + .0197 \times 70 - 1.1016 = 1.38$$

So we would predict that he would earn, roughly, two thirds C grades and one third B grades. In other words, with proper application he should be a satisfactory, but not brilliant, university student.

How well does this formula predict actual attainment? In one single term, the correlation between predicted and earned freshman grades is +.71. This has been pointed out to be about as high as any prediction can attain, since the correlation between grades for the two semesters of the freshman year is only +.75, and no prediction, no matter how accurate, could be expected to go above that extent of agreement. Discrepancy between perfect correlation and that actually obtained expresses human changes, in terms of changes in motivation, health, emotional stability, necessity of outside work, and just plain chance. It isn't the fault of a psychologist or a statistician if the individual changes. In making a prediction we must assume that conditions will remain largely the same as previously, make our predictions accordingly, *and hope that conditions won't change too drastically.*

A correlation presents merely mass trends. Therefore, let us look at the extent of individual agreement. As one example, the formula, which has an average error of six tenths of a grade point, predicted that 147 of 756 freshmen entering the general college would fail to earn 1.00 (or a C average). Here are the results for these 147:

123 failed to achieve a "C" average during the freshman year.
24 did passing work, but of these 24:
- 6 withdrew at the end of their first year;
- 2 withdrew at the end of their second year;
- 1 was dropped during the second year;
- 3 did not make a "C" average during their second year;

5 did not make a "C" average during their fifth semester;

1 dropped a year behind his class.

Thus only six of the 147 for whom failure was predicted did satisfactory work for their first five semesters. And each of these few cases of divergence could be explained by some definite reason: principally failure to try hard on the intelligence test, or transfer to some curriculum which does not have such stiff *abstract* demands: art, music, physical education.[2]

D. Individual Diagnosis

Let us next demonstrate the accuracy of prediction by several individual cases, which illustrate the effects of high and low intelligence and high and low high-school records, in various combinations.

TABLE 25. Relation Between Aptitude Scores and College Grades

Student	*Coll. Intell. Percentile*	*H. S. Percentile*	*Pred. Ave.*	*Earned Ave.*[a]
A	99	100	2.65	2.58
B	8	83	.70	.83
C	95	11	.81	.36
D	14	33	.32	.07
E	96	9	.79	2.30

[a] An "A" average is 3.00; "B" is 2.00; "C" is 1.00, etc.

"A" was at the top in both variables, received a very high predicted grade point average, but earned it almost exactly as predicted. "B" is a person of mediocre college aptitude, but had managed to make excellent high-school grades, yet could not do even passable work in the more difficult college subjects. "C" and "E" present interesting contrasts. Both had poor high-school records, but possessed extremely high native aptitudes. Yet "C" continued his unsystematic high-school habits, while "E" used his

[2] This does not mean to decry in any way these curricula; aptitudes for them are different from those for say languages or history. Many who may be superior in the more verbal subjects might fail in art or music.

innate abilities when he encountered the more stimulating college courses. (Both cases are known personally to the writer, so this analysis is not mere conjecture.) "C" was a case of a bright boy whose parents were forcing him to take premedical courses, but whose underlying interests were toward journalism and dramatics. He did very well in such courses, but uniformly failed biology and chemistry.

Such analysis is very useful for guidance along various lines. Poor grades alone may be ambiguous; is the individual truly poor in scholastic ability or on the other hand is he distracted by worries, ill health, too much outside employment, too much dating, or excessive participation in extracurricular activities? If he is low in scholastic aptitude we may urge him for his own good to turn his efforts into channels other than higher education. But if he should make a satisfactory or superior college student, we can diagnose the cause of his having fallen below his scholastic promise, and help him accordingly.

Those colleges which can maintain stricter admission standards and exercise some individual guidance, can indicate to the student or to his parents the probability of the applicant's becoming a successful college student. For instance, we could send a letter stating in substance:

Dear Parent:

Of boys and girls equal to your son (or daughter) in scholastic ability and high-school grades who have previously entered the university, we have found that 7 out of 10 (or 9 out of 10, or 3 out of 10) have eventually graduated. This figure, of course, only indicates probabilities; we cannot state for certain that any person, no matter how talented, is certain to be a good college student; nor can we predict that anyone is sure to fail, regardless of how poor a high-school record he may have made. But we are indicating to you, as parents of a prospective college student, the likelihood of your child's success. With this brief prediction then, we can only point out that you must make the decision and take whatever risk there may be.

(signed)
Personnel Director or Director of Admissions

Actually the greatest practical educational utilization of the prediction formula is for those toward the two extremes. We wish

to uncover potentially superior students and encourage them to perform up to their capacity; with those of doubtful abilities, we can either devote special counseling efforts to enable them to graduate, or guide them into more profitable channels. Ruedisili (15) made such a study, tracing the correspondence between prediction and earnings in those men freshmen who were predicted to attain better than 2.00, and for those who were not expected to earn as high as 1.00. The results are quoted in Table 26; they

TABLE 26. Relationship Between Predicted Grade-Point Average at Various Levels and Actual First-Semester Grades

Predicted Grades	*First-Semester Grades*				
	−1.00 to −.01	*.00 to .99*	*1.00 to 1.99*	*2.00 to 3.00*	*Total*
2.50 +	(0%)	(0%)	3 (9%)	32 (91%)	35
2.25 to 2.49	(0%)	5 (8%)	21 (34%)	36 (58%)	62
2.00 to 2.24	(0%)	9 (14%)	27 (42%)	28 (44%)	64
.50 to .99	23 (15%)	54 (39%)	52 (37%)	10 (7%)	139
.00 to .49	24 (25%)	44 (45%)	27 (28%)	2 (2%)	97
−.01 to −.50	25 (38%)	32 (49%)	9 (14%)	(0%)	66
−.51 to −1.00	13 (65%)	5 (25%)	2 (10%)	(0%)	20

speak for themselves. While there are a certain number of departures from expectation, we see that extreme deviations simply do not occur. Students, of course, continue to have the same aptitudes they had in high school, and their habits of study, poor or good, are likely to remain very similar.

E. Superior Students

Prediction of honor students is not as accurate as is prediction of average and unsatisfactory students. It is true that almost all of those earning Phi Beta Kappa ranked among the top 15 per cent of all college students in intelligence; but the converse is not true. Not 15 per cent of students do actually earn grades high enough to warrant receiving such scholastic honors. We can tell a person whether or not he is capable of making honors, but of course he cannot be guaranteed such success. Not only does he have to be brilliant, but he must work regularly and efficiently, must be in

good health, must not have serious emotional problems, must avoid too many extracurricular and social activities, and must not have to earn too great a proportion of his expenses. Any one of these factors can reduce his grade-point average, but all must be favorable to keep him at the scholastic top.

F. Graduate and Professional Schools

So far we have discussed prediction for students taking general courses, such as most colleges have leading toward the A.B. degree. Without going into detailed statistics, we can say that it has been demonstrated that prediction is virtually as good with the engineering and agriculture schools as for other undergraduates. Both cases are crucial. With engineering the material is so confined to what we might term science and mathematics, and removed from literature and language, that we might expect the usual intelligence tests to be inappropriate to measure potential ability. Agriculture, likewise, is generally considered less abstract than the general course. It is highly probable that prediction of success in art, music, physical education, and nursing would have to be on an entirely different basis, however, as each of these demands certain special aptitudes.

The prediction can be extended upward to professional schools as well as to undergraduate performance. It appears that only the top half of seniors, both in terms of intelligence and scholarship, have even a 50 per cent chance of graduating from law school. But, since law has no definite prerequisites, as medicine does have, intelligence score alone will predict possible success. Even this assumes that often the individual will depart from his undergraduate habits—although in actuality this does not occur as often as students claim it will. For this reason, it is strongly recommended that one who has been socially inclined or has participated in several extracurricular activities should transfer to another school, where he can start out as a serious advanced student. This is a matter of breaking from past surroundings, rather than anything more significant. One gets away from both the geography and the social side of his less serious undergraduate days. We do find cases of "turning over a new leaf"; for instance one honor student in

law had earned barely a "C" average as an undergraduate. He was in the 100 percentile in intelligence, and during his undergraduate days had been editor of the senior yearbook, a prominent member of the college-paper staff, and had been socially very active. But such radical changes of work habits are conspicuous by their rarity. The majority find it difficult to change from their undergraduate habits. Combining the two figures—undergraduate grades and intelligence rating—only 8 of 58 who had been below college average in both succeeded in graduating from law school.

VI. Orientation

Since it is obvious that the entering student cannot adjust instantaneously to his new environment, the college must do what it can to forestall difficulties arising from the sudden change in living and working habits. Hence many colleges have established an orientation program. Freshmen are asked to arrive a few days early, and a program is arranged to acquaint them with the physical surroundings, with college life, with their fellow students, with study habits, with the various curricula, etc. The purpose can be stated very succinctly: to enable the freshman to start his classroom and social life with minimum friction when formal university work actually begins.

During this time various formal and informal meetings and programs are arranged to enable the new student to start his class work as well adjusted as possible. The administration may be aided by upperclass men and women who act as leaders of groups and keep things moving.

To start with, the new students learn the locations of the various buildings of the university and the use of each. Thus they can find their way around and take full advantage of all the services offered, such as cooperative stores, bookshops, cafeterias, medical facilities, gymnasiums, reading rooms, social centers, etc. At the same time they may be told the history and ideals of the institution, so that they will feel that they belong to something definite and alive, not just a collection of dormitories and classrooms.

Definite instruction may be given along several lines which will be found necessary later. Study hints constitute one important item. For the great majority of students this is the first time they

are away from home, and in contrast with high-school and parental domination there will be no one in or out of class hours to tell them when to do anything. This means that time must be budgeted and that some sort of planning will be necessary. The study environment is bound to be more distracting, so some suggestions on concentration and overcoming distractions will be in order.

Proper use of the library may be explained in an hour's informal talk. This will include instruction as to how to look up desired books or periodicals in the card catalogue, information as to where reserved books are to be found, and how to find references on specific subjects.

The social side of freshman week is an important, even if less tangible, aspect to this period of orientation. Many who are away from home for the first time will feel lonesome and out of things until they form a few friendships. Becoming acquainted will be easier and more informal if all persons present in a group are known to be freshmen. Dances, informal suppers, smokers, athletic rallies, and trips around the campus all serve this purpose in various ways.

From an administrative purpose freshman week is also useful in permitting testing of various sorts—intelligence, English, language, or scientific aptitude, etc. The group is all together and more easily available than at any time later; classes will not interfere; and better cooperation is secured before the individuals become thoroughly "collegiate."

VII. The Curriculum and Curricular Guidance

The curriculum has traditionally been founded for the purpose of providing an all-round education. We have seen that this is not necessarily achieved. Realizing this, progressive educators have urged, and several colleges have listened to them, that the curriculum be brought up to date and be made flexible in terms of the future of the individual student. Except for blind adherence to classical tradition, there is no sound reason to say that a man is not educated or is not prepared for life if he does not know a foreign language, a science, a history, or a period of literature. Since only a small percentage of the student body will enter a profession, some of the traditional requirements have become obsolete. In the

present world, study of social sciences and contemporary civilizations would appear to be much more appropriate to prepare for life.

As one example, Dartmouth College has installed a two-year required course in social science, which involves taking a semester each of four out of these five: economics, government, history, psychology, and sociology (*12, 16*). This sequence has replaced some of the more traditional requirements. The several aspects to this course are carefully integrated, so that they aim toward a common goal, rather than being disjointed. The course aims at understanding the origins, growth, and present status of our economic, political, and social institutions. Likewise, what are termed "topical majors" have been introduced. Rather than major in say economics or history, one may major in such fields as "international relations" or "social reconstruction." Then, a sequence of courses appropriate for the individual's needs is worked out, even though it cuts across department lines. For instance, one cannot appreciate the status of education in 1850 without also understanding economic society, social attitudes, and even religious and moral standards. Pertinent material should be introduced, whether it comes from the English, comparative literature, economics, psychology, or sociology departments. The most recent development in this college is a course for seniors, entitled "Great Issues," which takes up topics this name would imply and attempts to orient those about to graduate to the world in which they will find themselves.

The larger universities are also liberalizing possibilities of taking courses in divisions other than those in which they are registered. A senior girl who may be planning to be married soon after graduation should not be prevented from taking pertinent courses in home economics, just because she happens to have been majoring in literature. Nor should a boy intending to work in his father's greenhouse be forbidden by a technicality from taking an appropriate course or two in the agriculture school. Likewise, music or art should be open to those who are interested and talented, but who do not care to spend full time in these schools. The only prerequisites should be genuine interest, ability to cope with the material, and value to one's future.

With these progressive and liberal trends, and each student presenting an individual problem, guidance must be much more careful than it has been in the past. The faculty adviser must find out more about the student's capabilities, interests, and future, and must have a better acquaintance with course offerings than he needs to know if the program is traditional and largely standardized.

VIII. Counseling and Guidance

A. General Principles

One of the precepts of college personnel workers is the insistence that the faculty is at the heart of the guidance program and that each member must play his part. Complete counseling and guidance cannot be left solely to the bureau, no matter how competent or hard working they may be. Especially in the larger universities the personnel official cannot possibly be personally acquainted with more than a small percentage of students, and the best assistance must be rendered by faculty members who may know in a personal way the student and his problems. Such a counselor uses his greater maturity and experience in academic matters to give the most appropriate guidance along curricular and extracurricular lines. He can also aid as an older friend in personal problems, as a parent or respected elder would serve at home.

This situation is, of course, ideal. Not all faculty members have the training, interest, or outlook to do equally good jobs. There is a definite advantage pertaining to members of certain departments, such as psychology or education, in understanding and sympathizing with the problems of college personnel and in being able to interpret the student accurately. It might be said that it is as unfair to expect members of the English department to deal in personnel problems as for a psychologist to familiarize himself with world literature. But, if we think of education in the broader sense, every faculty member is an adviser as well as a teacher of Sanskrit or philosophy or chemistry. If he neglects or takes casually as a necessary evil his advisory function, he is in every sense of the word repudiating one of his more important duties.

In such guidance, the consecutive steps are from broad to minute. The first consideration is the choice of school within the

college or university. In entering, one may elect a general course, majoring in either liberal arts or science. Or he may choose more directly practical curricula, such as agriculture, forestry, medicine, law, engineering, pharmacy, nursing, or home economics. In most colleges the majority of students take some general program, and let their specialized interests develop with education, experience, and maturity.

Curricular guidance becomes broader as college years are ascended. The first two are usually largely prescribed, and one should urge the student to fulfill his requirements then, so that he will not find some elementary subject hanging over his head later when he wants to devote his time to more advanced and specialized work. Optional courses should be so chosen that they are suitable and of value for the needs of the individual. They should include not only those for which the student has particular aptitude, but also those lines which will correct apparent weaknesses. It may be remarked that we no longer accept the old educational theory of taking an undesired course solely for its disciplinary value. But if a student shuns science or mathematics, for example, we should find the reason. It may be because he is unwilling to be careful, to take pains, or to go slowly enough to be accurate. Any of these are more personality defects than intellectual shortcomings, and should be remedied rather than encouraged by coddling, for an all-round carelessness of this sort will be serious in any vocation one may follow later.

The student should also get a certain amount of breadth in his courses. The interested student often develops a tendency that may be commendable in one sense, although unfortunate in the long run, to narrow his interests to his major field to the exclusion of other fields. Actually, one will soak in his professional atmosphere all his life, and will not have again such an excellent opportunity to acquire other fields of knowledge. The laboratory sciences especially cannot be readily acquired later. Also, such subjects as sociology, economics, philosophy, biology, history, languages, and literature have great cultural values. Education not only prepares a person to earn his living, but should also make him a more valuable member of the community and give him a keener and more balanced outlook on society.

B. Aptitude Tests

Aptitude testing is one of the more important functions of college personnel. Most colleges administer an intelligence-testing program, and some measure certain aptitudes, achievements, and interests. Among the aptitudes are mechanical, reading proficiency, mathematical skills, general scientific aptitude, clerical ability, and personality analysis. Thus one obtains objective ratings over a wide scope of mental activities and can tie the whole together to furnish a complete picture of his various mental, educational, proficiency, and personal attributes.

In finally advising the student as to choice of courses, we must use all available information. This information comes from a multitude of sources, some of the more important being:

1. Test scores: intelligence, personality, interests, achievement.
2. Grades, as indications of abilities and interests.
3. Physical condition.
4. Work experience, to show skills and interests.
5. Case-history records, to show the individual's progress over a period of time.
6. Data disclosed during the interview.
7. Staff clinic: difficult cases are analyzed by joint discussion among experts and persons knowing the student personally.

C. Veteran Counseling

Ideally, veteran counseling should not introduce any special problems that do not arise with other students, but as a practical matter a number of items do arise with this group of students who are continuing their education after a gap of as much as five years, and many of whom had no previous ambition for higher education. Final answer to their ultimate adjustment to college must await completion of college and even vocational adjustment. Let us, therefore, content ourselves with merely listing some of the outstanding problems:

1. Settling down to routine study after years of active and varied life.

2. Adjustment to social and extracurricular aspects of college life.
3. Attitudes toward class work in terms of their several years' greater maturity.
4. Physical handicaps.
5. Influence of marriage on college success.
6. The unknown proportion of those who are entering college because of governmental subsidies, who would not otherwise have contemplated higher education.
7. A corollary to items 2 and 3 is the possible effect on other students who were too young to be in the service and are entering college at 17 or 18, to find many of their classmates in their middle twenties.
8. Service training leading toward a practical outlook, with possible demands for revising the curriculum.
9. Whether earned college grades will be higher or lower than nonservice students with similar aptitude scores and high-school records.

IX. Adjustment to College

More and more colleges are becoming interested in helping the student to attain a balanced personal life. The older attitude of merely supplying an intellectual cafeteria and "the devil take the hindmost" is fortunately rapidly disappearing. It is now realized a good intellect plus education do not necessarily guarantee any better emotional balance than comes to those less fortunate in endowment and formal training.

Let us describe very briefly the nature and purposes of mental hygiene, which is the field of personal adjustment. It has as its principal purpose to assist the individual to attain better emotional and personality adjustment. If one has serious emotional problems, he will be neither happy nor effective in his work. We rarely have cases of definite insanity in college, but it has been estimated that approximately two thirds of college students could profit by consulting an expert in personality and emotional problems, and that about a quarter have serious need of such assistance. While some cases of minor maladjustment may become serious if neglected, in the main we are considering those conflicts which

militate against one's deriving the greatest happiness and effectiveness in daily life.

We shall confine our discussion here to the origin and nature of adjustment problems at the college level, emphasizing those which arise at that particular age and in that sort of environment. However, since many difficulties have their roots in conditions pertaining earlier, let us list some of the underlying causes:

1. Physical causes: deafness, disfigurement, malformation, crippling accidents often cause neurotic symptoms.
2. Spoiled and undisciplined children, only children, may have difficulties in adjusting to strangers of own age when first away from home.
3. Children not allowed independence in deciding their own problems find themselves helpless at college.
4. Emotional crises and traumata may leave permanent effects.
5. Adolescent conflicts: social or physical.

In several respects the college situation is unique. Students are supported by their parents, yet are living away from home; they are still engaged in education while the majority of their contemporaries are in other pursuits; they have to make the majority of their own decisions even though economically dependent. However, this situation should be turned into an asset, not a liability. College should serve as a transition between the rather complete domination by parents and teachers during grade- and high-school years, and the practically complete independence of the early job-holding period. Accordingly, parents of children who are likely to attend college should prepare them in advance for this transitional period. That this is possible is seen directly in the fact that adjustment problems of those coming from large city high schools are far fewer than those from small towns. These students have had more independence and opportunity to exercise judgment and initiative, so in their transition to the responsibilities of college—when, where, what, and how much to study; what activities can be undertaken; when and how much social life to try; how to handle finances and other personal decisions—the changes are that much less abrupt. Therefore, let us inspect several of the major sources of difficulty in colleges, remembering

all the time that the underlying causes usually arose in earlier environment.

A. Transfer from Home Environment

With many students, entrance to the university furnishes their first taste of personal independence and responsibility. College should represent an intermediate stage between the complete dependence of youth and the independent existence when one gets into his vocation. For this reason it is undesirable for a college to shelter its students excessively; yet many freshmen do have difficulty in assuming responsibility without some regulation by parents or teachers. Class attendance is less strict than in high school, hours of study are not regulated, and movies or dates are an individual problem. Boys are seldom required to return to their rooms at a certain hour; girls must usually report to the dormitory at a time more in keeping with bedtime than study hours. No one tells students when to change clothes, take out their laundry, or clean their rooms. Small wonder it is that some fail to adjust, especially if parents have been oversolicitous, as in Jack's case.

Jack, a freshman, was reported at midsemester marking period as failing in most of his work, and his work and his attendance had been very irregular. Investigation disclosed that he wasn't ill-willed at all, but no one told him definitely to go to class, so he played tennis and otherwise consumed his morning hours. When matters were reported to his parents, his mother wrote back to the dean that her son shouldn't be condemned too harshly, as he must be having trouble adjusting. She said that in high school she allowed him to sleep until the last moment, drew his bath, then awakened him, laid out his fresh linen, and brought his breakfast to his bedroom. She suggested that the university should furnish someone to awaken him each morning.

B. Larger Social Group

Transfer from the home environment is often complicated by the process of becoming a member of a larger community. The transition is more difficult for students from small towns than for those who have attended a large city school. The city student has less academic supervision; he may take a bus to school, stay there

for lunch, and have more freedom after school hours. This comparative freedom encourages independence and self-reliance.

C. More Intense Competition

In a university the competition in all ways—grades, athletics, outside activities, social—is obviously more severe than in high school, which often results in dangerous deflation of the ego. Students who have been valedictorians, prom leaders, or football captains are not only no longer prominent, they may actually be more or less ignored. The student should be prepared to anticipate and meet the added demands, and he should realize that he cannot expect immediately to rate as highly in the expanded environment. Parents should realize this fact also, since they often increase the student's feeling of failure by insisting upon impossible performances. Even high-school principals have been known to blame the university when their former A and B students get only a C average in college. Such a drop is to be expected. The subject matter is more difficult and the competition is greater.

Conflicts aroused by causes such as these are responsible for many visits to the university infirmary, of which the following case is a typical example.

Irene entered the university, but her intelligence score showed that she was not really fitted for higher learning. Gradually she fell more and more behind in her work and began to accumulate failing grades in her courses. She stayed up late at night trying to keep up, drank an excessive amount of coffee, finally had hysterical outbursts and was taken to the infirmary. At first it appeared to be a simple case of overwork, but after she had paid several visits to the hospital for a week at a time, it became evident that she was trying to do work beyond her capacity.

D. Failure to Break Family Ties

Failure to break family ties is another common cause of maladjustment in college students. They are overdependent upon their parents and have not developed mature personalities. They cannot become oriented to their new independence, and they do not assume responsibility or initiative. This symptom may appear whether the student is living at home or is away at school. He may be emancipated right in the same house or dependent 1000

miles away. Symptoms of dependence include writing long letters each day, telegraphing parents for aid in making minor decisions, going home every week end, and hesitating to make slight purchases without parental authority. One boy went home every week end for four years; even when his fraternity had a dance he went home Friday and returned Saturday evening. One girl bought such minor items as ink during vacations and carried them back 500 miles in her suitcase.

Overdominant parents may have just the opposite effect; the student will rebel against university authority as an indirect way of defying his parents, usually without realizing the reason. Overcutting and breaking of social regulations are often traced to this sort of mechanism, with the instructor or dean standing in place of the domineering parent.

E. Social Adjustments

Especially in connection with dating and fraternity membership, social adjustments are sources of difficulty to many students. Again it is a question of competition. The girl may have had many admirers in high school, but she does not attract boys in the university. One girl tried to commit suicide because she had been Prom Queen in high school and had only three dates during her freshman year in college. Others adjust more normally by making themselves attractive socially or by engaging in other types of activities. Parents are unwise to emphasize the importance of fraternities and sororities beyond their normal value simply because they wish to tell their friends what organization their child has joined. More than once ambitious parents have actually withdrawn Mary or John from college for no reason other than that a certain society failed to appreciate their merits.

Outside activities present further problems of adjustment. Some students wish in a vague way to participate, but fail to take the initiative. In high school a teacher or parent applied pressure, but in the university no one is likely to urge one.

As bad a situation arises if the student has too many activities. On every campus there are a few students who are in everything from athletics to debating. To derive the most benefit the student should choose wisely and restrict himself to one or two extracur-

ricular activities at a time, in order that neither the activity nor one's studies are sacrificed "Nervous breakdowns" affect the most capable college people, regardless of youth, not so much because of amount of work undertaken as because of multiplicity of stimuli, with constant tension and absence of relaxation.

F. Conflicts of Ideas

Problems of religion, sex, economics, and vocation upset some students so much that their work and emotional balance suffer materially Students should attempt to solve each problem to their own satisfaction But while they are seeking a solution, they should remember that the same problems face each student and that there is nothing peculiar or unique in their dilemma Most colleges have counselors to assist in these problems, and professors are usually willing to help.

G. Minor Problems

In the sense that they are relatively temporary, finances, health, and study efficiency are minor problems As to the first two, we have already suggested, that a student who must engage in a great deal of outside work for self support or who is below par in health should carry a reduced program If he wishes to derive profit from a college education, it is better to do well in a few courses than to do a mediocre job with a full load

Poor study efficiency is caused by any of the difficulties we have listed, plus emotional conflicts of any sort Girls have been known to fall behind in their work, then cry for hours about it, instead of spending the time in catching up. Failure to concentrate is often evidence of conflict of some sort In many cases, however, psychological analysis is beside the point, the student merely, in plain words, lacks "guts " Instead of forcing himself to study, as a tired runner forces himself to continue a race, he finds excuses for not doing so.

H. Diagnosis

Another important use of a mental hygiene program is to diagnose and straighten out problem cases which come to the attention of the administrative officers Cases of cheating, chronic over

cutting, persistent incompleteness of work, or conflicts with authorities are frequently traced to emotional problems or to health difficulties. Cooperation with the medical department will assist in this latter case. An interesting example of emotional conflict was that of a student who got into trouble in several classes because of his extremely pugnacious and negativistic attitude. It was found that his home environment was such that he was constantly repressed and held down. In class he was trying to recover his self-esteem and was decidedly overdoing it. When this basic explanation was made clear to the instructors and to the student himself, the resultant mutual understanding improved relationships all around.

If a mental-hygiene program is to succeed, information secured in an interview must be kept confidential and not disclosed to other university officials whose function may be principally disciplinary or administrative. An axiom is that the only possible exception is that such testimony, if passed along, will be to the benefit of the student, and it is to be recommended that the student be told in advance that his statements will be used in his behalf and not against him. In all other cases strict secrecy must be preserved. Only in this way can the complete confidence of the student body be gained, and without such complete confidence any attempts at mental hygiene or psychiatric work are bound to fail. Even the mildest antagonism and hesitation will cause repression, and the counselor will be as handicapped in his work as would a doctor if the patient refused to disclose his symptoms.

X. *Sources of Academic Failures*

Turnover in the academic world, apart from graduation, must be considered as more serious than in industry, since we are interested in each individual rather than in mass statistics. Only about half of those who enter college eventually graduate. Reasons of finance and health we cannot avoid. Others, poor in academic aptitude, should have been discouraged from ever attempting higher education. Still other failures or dropouts can be prevented by an adequate counseling system.

It is of special importance to study students who have a good degree of aptitude but who are doing work far below their ability.

If one has the capacity to do superior work, both in college and in later life, it is a good investment of extra time and energy to develop such potential leaders. It is possibly unfortunate that much of this time and energy has been spent in dealing with the other end of the scale, trying to bring up to a barely passing grade those cases of probable failure where there does not seem to exist evidence of real ability or other mitigating factor. Several colleges have found that only a small fraction of those who have once gotten into scholastic difficulty eventually graduate; readmission only results in a second failure.

Studies of academic failure have been conducted at the University of Wisconsin. One attempted to analyze the causes of failure in freshmen women who had a high-school intelligence percentile rank above 90, but who had failed to earn better than a C average. Another study tried to discover causes which prevented students with high intelligence from standing equally high in their class work. It made the assumption that even a B average on the part of a student at the top of the list in intelligence constituted partial failure; a gifted student should earn mostly A's. In both studies the interview method was used and case analyses were presented. No formula could cover all causes of failure; each presents its own problems. Some of the more frequent causes are listed below.

A. Family Background

Family background may contribute toward failure. A disproportionate number of girls who were doing poor academic work were either "only" children or "only" girls. Overindulgent and indifferent parents may do their children actual harm, unless the individual has sufficient balance natively in himself to regulate his efforts sanely (*1*).

B. High-School Factors

High-school factors of several sorts may be responsible for difficulties when the individual gets to college. The source is rarely in poor quality of the high school, however. Frequent transferring from one school to another interrupts the continuity of preparation and gives an insecure foundation for more advanced study.

Bright children are able to get through the public schools with a minimum expenditure of effort, and may fall into slack habits of study. Engaging in too many outside activities may also prevent a sound foundation from being acquired. This may also produce a nervous tension which persists into college, prevents good concentration, and gives the individual an exaggerated idea of his own importance.

C. Change to College Freedom

During high school, both within school hours and at home, one has fairly close supervision. In college, however, there is no one to tell the student when to work on a certain subject, or even to study at all. With the lecture method instead of constant recitation, there is less day-by-day check-up on the progress of work, so that daily study does not seem to be so immediately imperative. Occasionally a student expresses a wish that study hours were more closely dictated. Doing this, it seems to the writer, defeats one of the main purposes of college already pointed out, which is to develop independence and the ability to guide one's own affairs. However, the personnel office may render valuable service in aiding the student to make this transition to independence by drawing up with him a tentative study program (see chapter on "Efficient Study Habits" for a sample) and by conferring with him in time to prevent actual failure when it begins to be evident that he is not following satisfactory study habits.

D. Study Faults

Study faults form another important source of college failure. Probably the most important item within this group is a lack of real purpose for going to college. The person may study enough to get by and to keep out of trouble, but be performing far below his real capacity. It is difficult to supply such a student with the proper motivation, since he does not want to do better and will pay little attention to advice or threats. Some will respond to mild insults; I have waked up several by remarking during the course of an interview that with their present attitude they were not fit

to be in college. Some are so indifferent that remarks as strong as these are shed like the proverbial water off a duck's back.

Lack of interest in specific courses is a similar cause of difficulty. Freshman studies, particularly, are largely routine in nature, and are frequently taken with a negativistic attitude. It might be worth while to have the instructor take up the first class period with an explanation of the purposes and values of the course.

Failure to study consistently and to plan ahead are other major sources of college failures. These are comparatively easy to handle and remedy if the personnel interviewer assists the student in planning a schedule for study and recreation. The schedule is first filled in with the regular classes and other specific engagements; then appropriate unassigned hours are designated for study, ideally designating certain hours for certain subjects to ensure greater regularity. Particular care should be taken to utilize time often wasted, such as hours between class periods or before and after meals. If periods such as these are used for study, one will be surprised at the amount of work accomplished and the freeing of other more desirable hours for recreation and outside activities.

E. Social Distractions

Social distractions rank with inefficient study habits as a serious cause of inferior scholarship. One causes the other; giving in to social pressures results in failure to study properly and sufficiently. Fraternity and love affairs form the greatest distractions. Students often spend too much time with friends at their fraternity or sorority, or with the person with whom they are infatuated. Some who have not joined a fraternity or who are unrequited in love brood over this and fail to concentrate on their work. One dean of women humorously observed that the two principal causes of poor grades in girls were being in love and not being in love; either status militated against satisfactory study habits.

A person must learn to inhibit himself against excessive social distractions. One living within a social group is constantly subjected to movie, dance, bridge, and other invitations. Many students run into trouble simply because of inability to say "No." Not

only does this result in less time available for studying, but one attempts also to study late at night, when he is tired and cannot concentrate effectively. Late hours make for inferior work then, and because of the resultant loss of sleep one does not do his best the next day. In general one should confine himself to week-end nights for late social engagements. Just how much time can be taken off during the week will depend on the ability, health, and program of the student.

F. Health Problems

Health problems sometimes prevent the individual from studying properly. It would appear better, in cases where the trouble is not serious enough to necessitate leaving school, to have the boy or girl carry a reduced program and try to do a good job with fewer courses. Ten hours of "B" are better than fifteen hours of "C" from the standpoint of the student's deriving benefit from going to college. If the difficulty is more serious it might be better to stay out of school and return when one feels able to work up to his full capacity.

The personnel and medical directors should cooperate in handling health cases. Many individuals claim health reasons in order to drop out of school or to drop courses when they find themselves in bad standing or hopelessly behind in their work. Health problems may not exist at all, or they may be caused by late nights, from partaking in too many outside activities, from worry over grades, or from simple hypochondria. Some cases will call for mental-hygiene treatment to supplement medical handling.

G. Financial Shortage and Employment

Like social distractions, working may prevent one from devoting his best energies to studying. Earning a part of one's expenses should not be a serious handicap, provided the occupation is favorable. By far the least disruptive is waiting on table. The time consumed is usually no more than an hour at each meal, and during time which is usually wasted. Night restaurant or switchboard jobs should be avoided by all but those who have the strongest physique and who seem constitutionally fitted for get-

ting along with less than average sleep. Telephone or elevator jobs may permit one to carry on a certain amount of studying during lulls, but one must have excellent concentration to work effectively in these unfavorable surroundings.

Administrative officials universally urge the freshman to be prepared to finance himself without outside work for at least a semester after entrance. He has to go through the period of adjustment to college surroundings, and there is also the practical difficulty of obtaining employment in a strange community.

Most colleges and universities have a number of scholarships available for worthy students, or grant reduced tuition to those who are needy and are able to maintain a certain scholastic average. If one is especially needy, it might be better for him to borrow money to finance himself through the freshman year and thus put himself in a position to become a strong candidate for a scholarship.

It is very difficult for one to earn more than one third to one half of one's way through school. Analysis of many cases leads one to discourage all but the most robust and academically superior from attempting to do so. One who is not quite so talented might better earn money during summer vacations or even stay out of school a year to work and save up enough to carry him wholly or partially through the next school year. Or he may carry a reduced program and plan on taking five years to graduate.

Another angle is that anyone who has to work more than a few hours a day will lose some of the intangible, although valuable, benefits of going to college, in particular the social and cultural contacts. It is inadvisable for him to try outside activities, such as athletics, writing, or acting. A person cannot put out more than a certain amount of energy in the course of 24 hours without something suffering, and he will fall behind in his work sooner or later.

XI. Extracurricular Activities

The relation between academic and extracurricular activities is exceedingly complex. It is a very difficult task to trace cause and effect between athletics, dramatics, writing, place of residence, fraternity membership, or emotional balance, and actual academic achievement. Many factors contribute, health, outside activities,

social environment, and personal adjustment being outstanding.

It must be admitted that objective measures are unsatisfactory. The time consumed in basketball practice or rehearsing for a play may be no more than that spent in dating, going to the movies, engaging in intramural athletics, or just plain talking. So it is virtually impossible to compare the grades earned by a student who is in some organized activity with one who is not, unless one knows the latter intimately and is certain that he does not have some informal interest of his own but spends the remainder of his time entirely on his studies. That this point is really important is evidenced by the fact that very frequently football or basketball men do more poorly after than during their season. During season they have to keep regular hours and have to make their hours of study count, but after season they tend to become irregular in their study habits.

With athletics, there is a particularly difficult question. Would many athletes (particularly football players) come to college at all if there were no team? So, not only is the material likely to be mediocre, but those not especially interested in higher education will work only hard enough to keep eligible. We need not stress athletics exclusively; the lack of motivation holds for many other boys and girls who are in school more for social than for intellectual purposes.

All in all, with all these complexities, we cannot determine very closely the relationship between outside activities and scholarship. Several studies have shown that those engaged in social or athletic activities have a lower grade-point average than those interested in debating or other intellectual activity. This is probably more a matter of motivation, intellectual or other, rather than a direct result of either the nature of the activity or the total time spent on it.

Place of residence has its effect upon scholarship. Quite consistently from college to college and from year to year, the following rank order appears:

Highest, living in own home;
Second, living in other private house;
Third, rooming house;

Fourth, dormitory;
Lowest, fraternity house.

One notices that this rank order corresponds exactly with the extent of social activity possible and probable. The fraternity record is even worse than might appear, since most universities demand at least one semester's satisfactory work before allowing initiation, and since the majority of members are not burdened with the necessity of self-support.

Sororities, on the other hand, usually surpass in scholarship the general average of college girls, and are above dormitory averages. Higher selection does not seem to be the answer; rather it appears that the attitude toward grades is different than is held by the fraternities. Sororities encourage their members to do well, while many fraternity men are content with bare passing grades. Also, while rating such organizations is both difficult and opinionative, it has been observed on several campuses that the more widely known fraternities tend to have poorer scholarship averages than local organizations, while with sororities the reverse is true—the leading chapters rank toward the top. Understand that these trends are far from perfect, and that changes are bound to occur from year to year.

A counterargument may be introduced, however. We have urged several times that education be considered as equipping the boy or girl for his whole life, social and emotional as well as intellectual. So it can be claimed with justification that loss of a fraction of a grade point due to fraternity membership or extracurricular activities may be much more than compensated by the nonintellectual benefits. This is especially true for those not intending to enter any profession, rather than for those who are registered in a vocational preparatory course. For the latter, obviously, strict attention to scholarship is of much more importance.

The argument in the preceding paragraph is applicable in another direction. Wise administrators and counselors recognize that earning grades much higher than predicted may be as serious a sign of maladjustment as falling much below prediction. It may indicate social or emotional upset, leading to withdrawal and a

hermitlike existence, with excessive study but failure to derive any of the other benefits of being in a college community.

XII. Placement and Follow-up

Preparation for future life obviously includes among its functions that of vocational guidance. College personnel officers attempt to assist the student and to act as intermediaries between industry and the student body. It is of utmost importance, however, to recognize that *the college personnel office is not merely an employment bureau.* Its function is to coordinate the student and industry, and it should recognize its obligations to both. Its duties toward the student consist in putting him in contact with appropriate opportunities for earning a living, or in suggesting suitable postgraduate study to fit him to enter his intended occupation. A mere job, or opportunity to work, is not of necessity a right contact. Students should be protected against such contacts as would not furnish them with opportunity for the fullest degree of self-development. At the same time they should be made to realize that they will have to work hard for advancement and that it may not come immediately. However, they have a right to expect it to come sometime, in terms of years spent in higher education. The obligation on the part of the college to industry is that of supplying for interview suitable seniors for the positions to be filled.

To carry out this program the college personnel department will need to establish close contacts with various companies, particularly those which customarily employ a number of college men each year. The personnel director should find out what opportunities these companies offer the college graduate. He may ask the representative from the business institution questions substantially as follows: "To be perfectly frank, I would like to know what opportunities our boys or girls who go with you have. In what sort of work are college people started? Into what positions will they be promoted? How long should this promotion take? What features are there in your company's personnel policies which will allow a person who has taken four years of college training to advance farther and faster?"

It must not be inferred that the spirit of these questions is to

challenge the industrial representative or to search for flaws in any way. There exists a spirit of excellent friendship between college and industrial personnel departments. Each realizes that the other benefits him in his work, and that the more he cooperates the better it will be for him in the long run. It has always been recognized that the applicant must demonstrate his worthiness for the position; we are here urging that the organization demonstrate its own worthiness as a place for a well-educated person to work.

The contact with industry may be established in the college personnel office, by a visit of the personnel officer to the factory or store, or through both. A visit to the organization will give one a chance to see what type of work college graduates are doing, how long it took them to get that far, and to notice conditions and the general atmosphere surrounding the work. One may talk with graduates of his own and other colleges and see what progress they have made, are likely to make, and their general attitude toward the company. Inspection of the records of the personnel office will also show clearly and objectively the rate of rank and salary advancement of college graduates.

With the knowledge thus obtained concerning an industry, the college personnel director is ready to guide students and to assist them in finding appropriate work. *This counseling should begin as early as possible in the college course.* The student who fails to take advantage of the personnel office until his last semester or quarter is missing most of the service which can be rendered him. He should be preparing himself over his whole college career by selection of courses, extra reading, observation, interviews, and by becoming acquainted with various occupations during vacations. Occasional interviews appropriately spaced during this time can keep him progressively developing, so that his final choice at the time of graduation will be systematically based.

It would also be making an entirely wrong approach if the personnel interviewer told a senior who came in for vocational aid: "Here, I just received this letter from the telephone company. They want a number of men. Will you take one of the positions?" The individual may not have definite aims, and may grasp the first job that offers itself just for the immediate cash return, with-

out due thought as to his permanent likes and dislikes. Rather, the interviewer should study the intellectual and personality characteristics of the student and ascertain the probable direction of vocational interests.

We have discussed at several points during this chapter such factors as intelligence, high-school grades, college grades, and other

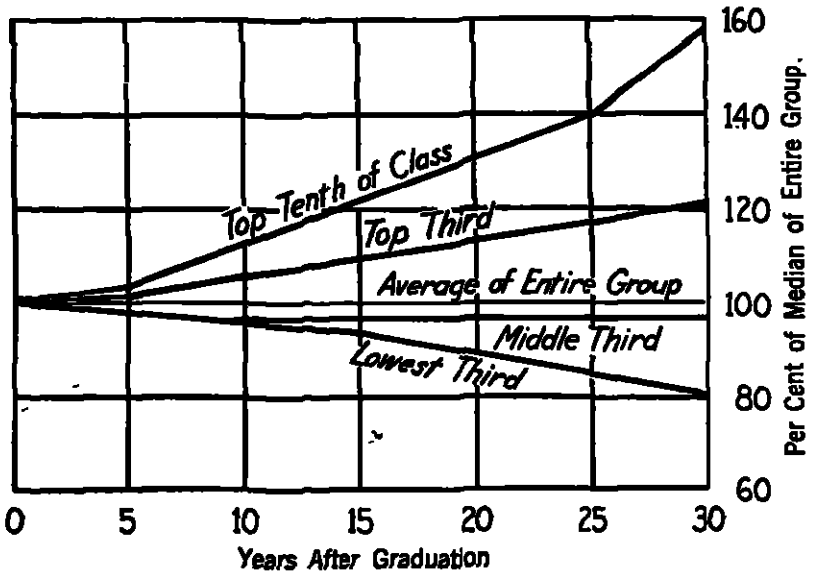

FIG. 11. College Grades and Eventual Salaries in a Large Electrical Manufacturing Concern. Top students consistently progressed more rapidly than those who had made poorer college grades. (Courtesy *Personnel Journal.*)

traits which make for academic and life's success. We pointed out in the case of many students entering professional school that poor undergraduate study habits tend to persist into graduate school, even though one may possess the necessary aptitude to do well. Does this also hold true with vocational success? Actually, those who do better in college likewise make the most successful people in the business world, at least as measured by income. A carefully worked-out study by the Bell Telephone Company (2) verified this, as portrayed in Fig. 11. We see that those who finished in the top tenth of their class in terms of grades earned far

more than the average of college graduates after any given period of service, and that the superiority manifested itself increasingly as the years went by. It will be understood that the figures are ratios; that is, 100 per cent represented the average earnings of college graduates in this company at the given time. Therefore a figure of say 160 per cent for those with 30 years of service and who finished in the top tenth of their class means that this group earned 60 per cent more than the average college graduate of the same length of service. At the other end of the scale, those who were in the lower third of their class fell farther and farther behind—although since the figures are in the form of ratios this did not mean that they did not succeed or failed to earn promotions, but that they rose much more slowly than the others. One may attribute these relative degrees of success and failure to intelligence as well as to study habits and what had been learned in college, and no doubt all these factors entered into the ultimate status of each individual.

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PART III

INDUSTRIAL RELATIONS

CHAPTER IX

MAJOR PROBLEMS OF INDUSTRIAL RELATIONS

1. Scope of the Field

Industrial relations is concerned with the relations of human beings toward their work and toward other human beings in their working situation. In a sense, it is the human side of industrial efficiency, dealing with human effectiveness, motivations, and personalities.

Two quotations from Walters (3) serve very nicely to sound the keynote to personnel (or industrial relations) problems.

Let us point out first that the terms *industrial relations* and *personnel* are rather ambiguous, due to their varying usage. In this treatment we shall use the term *industrial relations* to designate the entire field of human relationships in industry, and *personnel* to cover that portion of the field which carries on employment and record-keeping functions. *Labor relations*, a term sometimes used interchangeably with *industrial relations*, we shall use to refer to direct labor problems such as motivation, settling strikes and grievances, and union negotiations.

"Personnel Administration . . . is the obtaining of an efficient human force, adapted to the organization for which it is intended, and the maintenance of this force in relations mutually harmonious and profitable to employer and employee."

"Scientific personnel principles apply not only to the selection of employees, but also to the maintaining of the right employee in the job for which he is best fitted. The new conception of personnel work is to stress

the employer's responsibility in the matter. If an employee is fired or certain difficulties arise, the blame is being shifted to the employer rather than to the employee. Either the selection may have been inadequate or the management at fault. Labor unrest, discharges, disputes, and disturbances are coming to be looked upon more and more as matters of poor selection and poor management. Foremen and supervisors are largely responsible for management, because methods, materials, machines and men are usually furnished to them, and their job is to direct the force efficiently in order to bring a reasonable profit to the stockholder, good production to the management, and a fair wage and proper working conditions to the employee."

From these quotations we deduce the most important problems of industrial relations are: (1) to select for each position the applicants who seem most suitable, most likely to learn the duties quickly, and to do the best work; (2) to train them so that they attain suitable productive effectiveness as rapidly as possible; and (3) to so treat them that they will be satisfied and remain as happy and useful members of the organization.

There was little need of industrial relations a century or two ago, when work was much simpler than at present, when it was largely individual in nature, and when both industrial organizations and places of residence were smaller. If a cobbler or a printer hired an apprentice, the latter usually came from the neighborhood and was personally known to the employer; his work could be directly supervised; and such a high premium was not set on every last bit of efficiency as at present.

When machines came into use the worker's status suffered greatly, since his trade skill was no longer an irreplaceable asset. When the economic advantages of large factories became evident the whole industrial picture changed from that of craftsmanship to one of large groups working together. Consequently many new problems arose, the one of most concern to us in this book being that of the relations between employer and employee. Friction occurred because workers felt that capital was trying to exploit them—which was often true—and owners and managers felt that labor was trying to do the least possible to get by. Naturally high production can occur only if both parties are efficient, have ethical intentions, and are working together harmoniously. If each is

continuously trying to get the best of the other, both unhappiness and inefficiency will result. Therefore, industry is seeking to restore the lost personal contacts between management and labor by means of its industrial-relations organizations. It is impossible in any plant or store of more than a few dozen employees for the employer to know personally all the men, so he designates the industrial-relations department to specialize in human affairs, as *other departments specialize in finance, sales, or production.* Scott, Clothier, Mathewson, and Spriegel sum up this point as follows:

"Where previously the employer enjoyed the rich gift of friendship with his associates at the bench, it now became possible for him to know them only casually, if at all; to know their names and faces, perhaps, but not their weaknesses and their strengths, their interests, their ambition, their family fortunes, their follies, and their hobbies. They became to him merely a group of workers, a collective thing, whose labor must be bought in the market" (*2*, p. 3).

The industrial-relations department, thus, becomes a representative of the worker in his contacts with management, in some respects much as a lawyer represents his client. Even though a part of management, and a protector of management in certain negotiations, in doing its best work it will often make recommendations which are *temporarily* unfavorable to management. It must maintain a reputation of eminent fairness to the individual employee, admitting frankly that supervision may have been overly harsh, pay improperly calculated, a grievance unfairly handled, or a certain working condition unnecessarily unpleasant, and then taking steps to correct the unfairness.

Industrial-Relations Problems

Industrial relations necessarily has a very wide scope and a very ambitious program, since it concerns itself with the interrelations of individuals in all situations arising in connection with their work. We present in Table 27 an outline which sums up the principal activities of a completely functioning industrial-relations department. ~~These will be discussed one at a time during the next eleven chapters.~~

TABLE IV. Outline of Industrial-Relations Problems

I. Employment:
   A. Occupational description
   B. Application
   C. Interview
   D. Testing
   E. Physical examination

II. Follow-up Work:
   A. Introduction to the job
   B. Training
   C. Periodic rating
   D. Promotion and transfer
   E. Discharge and layoff

III. Efficiency:
   A. Reduction of fatigue
   B. Work and rest periods
   C. Working conditions
   D. Motion study

IV. Human relations:
   A. Treatment of employees
   B. Handling dissatisfaction
   C. Wages
   D. Safety and health
   E. Lunch and rest rooms
   F. Employees' organizations

V. Research:
   A very important function; studies and improves methods of handling any of the above-named problems, and often has the function of drawing up and executing consistent organizational policies.

Let us now examine some of the major principles of industrial relations management.

Formation of Definite Industrial-Relations Policies

The two principal functions of industrial relations are the bringing about of greater human efficiency, and ensuring greater satisfaction in one's job and its duties. One must keep on the alert to carry these on consistently.

precept that must be accepted is the recognition of the worker

as a human rather than as a flesh-and-blood machine. The older commodity theory of labor, symbolized by the term "hands," like so many cattle, whereby it was purchased at a price which went up or down according to demand, like the stock-market or the price of any item of goods, has disappeared in most organizations—and should have disappeared in all.

major function of the industrial-relations department is to correlate activities within the organization. Each department or division lays down its detailed plans, each naturally choosing the ideal program from its own point of view, and these may sometimes conflict. By making minor conciliations and modifications one can frequently eliminate waste, by means of cutting down overlapping between departments, transferring employees to take care of seasonal fluctuations, adjusting wage scales to more equitable bases, establishing sound training methods, and acting as adviser to outside departments in all questions of personnel relations.

B. Bringing About Progress

Thorough flexibility, open-mindedness, and search for improved methods are outstanding duties of industrial relations. With the severe competition of the present time, maximum efficiency must be maintained if a company is to continue in the struggle for existence. Any organization which is content to go on as it has in the past will soon find itself left behind by others which are more progressive.

One must look ahead to the future. This is the reason for keeping elaborate records and conducting research. The past cannot be "water over the dam" so far as industrial relations are concerned. Present methods are constantly subjected to careful scrutiny, to see which are working well and which should be altered. The mere fact that the company as a whole is earning a fair profit does not justify assuming perfection in all details of operation. Proper methods of selecting new employees, training, systems of pay, methods of supervision, promotion, and layoff all come under scrutiny. For instance, if one gives tests as part of the employment procedure, he should check up every few months to see if the majority of those who scored high on the test are more satisfactory

than those who made lower scores and also to see if labor turnover has been reduced.

C. Centralization

One of the most significant facts about modern society is its specialization. A man does a task only a twentieth as broad as his great-grandfather performed, but in so doing he produces a hundred times as many items. In a large store a salesman does not handle all goods, but confines himself to shirts, or hardware or drugs. A shoe worker does not make the whole shoe; rather he nails on the heel.

Likewise, each organization has executives to take charge of certain specialized functions. One controls purchases, another is a supervisor or executive, a third has control over financial matters, a fourth takes care of sales or advertising, and a fifth deals with industrial-relations problems. In the old days each foreman hired his own men and handled all matters of a personnel nature which arose. But with larger organizations and complex labor problems, including union organization, common-sense handling of problems by an untrained individual no longer sufficed. Many serious faults and shortcomings were observed. The principal duty of a foreman is to supervise production, and it is no more a criticism of him to say that he is not equipped or trained to make proper selection of his men and to take care of many of the contacts which are important after employment, than it is a criticism of an industrial-relations director to say that he could not supervise tapping an open hearth or produce synthetic rubber. Many of these problems have become highly technical; witness labor relations under a formal collective-bargaining agreement.

A direct advantage of specialization is seen in the following example. When a vacancy arises anywhere within the organization, the employment division should be notified immediately. If it seems desirable to promote an employee already within the company, the personnel office will have records showing experience, qualifications, personality traits, test scores at time of original employment, and periodical efficiency ratings made since. If an outside person is wanted, the office has an occupational-analysis

card which describes the characteristics of a person required to fill the position.

The customary procedure in a large company is to have a sheet prepared late in the afternoon for use the next morning, listing the immediate vacancies, with perhaps a supplementary list of expected openings which may be available later. For instance, the maintenance department may desire one electrician, two welders, and four general laborers; and in addition four painters and two carpenters next Monday for a planned repair job.

By use of such methods several advantages of centralization appear:

1. To start with, a certain amount of confusion within working departments is eliminated if persons who hope to obtain jobs are not wandering about from one place to another.

2. Having one department do all the hiring permits flexibility. If a man who appears promising applies for a position for which there may be no vacancy at the moment, he may be placed temporarily in some related job. But if he were to see only the supervisor of a single department, there are no mechanics for steering him into some other position.

3. The chief advantage of centralization of function is that an adequately trained staff can take care of all industrial-relations duties. The man who has studied the field from the ground up, both in theory and in practice, who is experienced in testing and interviewing, and who has made a study of human personality, will be far better able to deal with the problems arising than can the foreman of each department.

Since an interviewer deals with a large number of men from potential executives to the crudest laborers each day, he is better able to make an accurate judgment of the suitability of any applicant. If the foreman, superintendent, or buyer wants to have a part in the selection of his workers, which demand is logical enough, he can be present at the interview or conduct a second interview of his own, and he can of course review any factual data such as work history or test results. This will enable him to look over his own prospects, but at the same time it will preserve a uniform control over the personnel, and thus permit more objective

selection of new employees than the supervisor might be able to do alone.

Decentralized plants, on the other hand, have certain drawbacks. Permanent comprehensive records are not so readily available, if kept at all. A case has been quoted of a man being discharged from fifteen departments of the same plant within one year. A centralized system would have eliminated this, as he would not have been reemployed after one or two failures. We mentioned just above the confusion created by applicants going from one department to another, asking each foreman in turn if there are any vacancies. Foremen are less expert in estimating the merits of applicants, and some have been known to accept or reject persons through prejudice, because of color of hair, religion, or race. The method of selecting employees on the part of one foreman has been quoted as consisting in accepting all red-headed Irishmen and rejecting all others.

4. Promotion and other follow-up work can be carried on much better with a centralized office and permanent records. Suppose a vacancy occurs in one of the executive offices in the plant; it might be filled from any one of several possible departments. Without centralization such nominations would be likely to be hit-or-miss; one would have to consult the heads of a number of departments and make up a list of possibilities on a far less systematic basis.

Industrial-Relations Organization

To show the setup of an industrial-relations department we present in Fig. 12 a chart for the Carnegie Illinois Steel Corporation, Pittsburgh, Pennsylvania, as of 1946. We start with the United States Steel Corporation, the parent company, and trace the flow of authority in sketchy fashion to the vice-president of industrial relations of this subsidiary company. Then we see a breakdown into the vice-president's personal staff, eight divisions of the department, and the Chicago office, the latter necessary to transact business expeditiously in that area. The staffs of the various supervisors consist of technical and administrative employees, secretaries and stenographers, and file clerks.

We note, by following the lines, that the plant superintendent

of industrial relations is under the jurisdiction (the technical term is "reports to") of the plant general superintendent, just as are superintendents of maintenance, blast furnaces, rolling mills, etc.

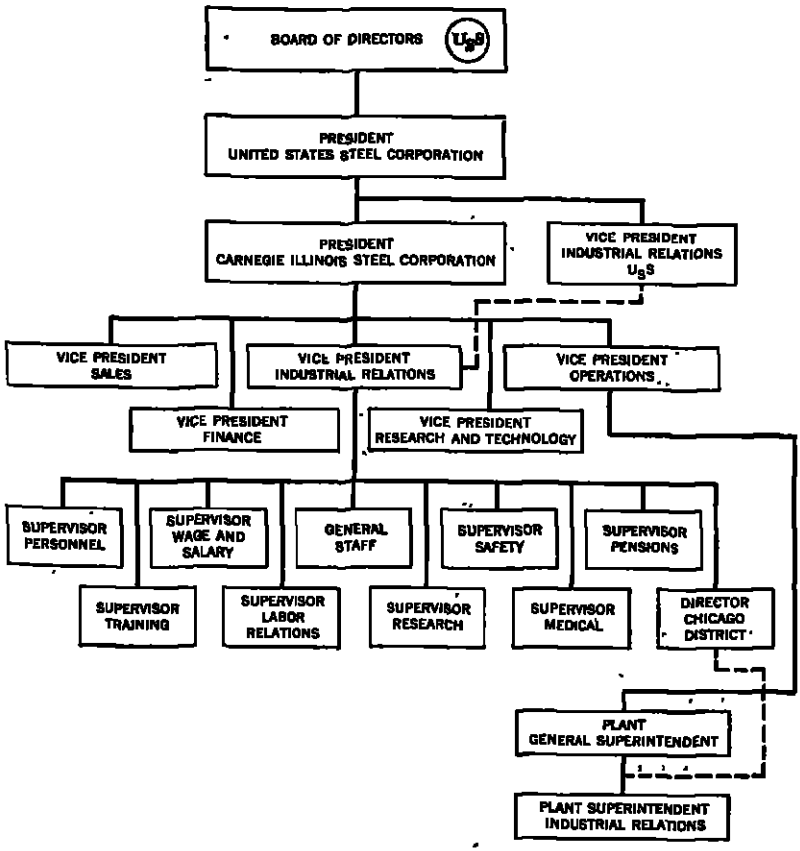

FIG. 12. Organizational Chart of the Industrial Relations Department of a Large Steel Company.

Therefore, it is evident that neither the vice-president of industrial relations nor his staff supervisors have any direct authority over plant industrial-relations matters. Such lines must be followed as carefully as proper etiquette at a formal dinner. If some program or policy is initiated within the general office to be car-

ried out in the plants, such as a regular absenteeism report or a consistent vacation policy, the vice-president of industrial relations must convince the vice-president of operations of its merit, and the latter then issues orders to that effect to the general superintendents of the twenty-odd plants in the company, who in turn pass the instructions along to the superintendents of industrial relations for them to carry them out. In actual practice the vice-president of industrial relations or his representative may have discussed the proposed programs with the plant superintendents of industrial relations, but when formal initiation of such programs is made, and instructions are put into writing, the formal channels must be followed.

All this may sound like a lot of red tape. It cannot be denied that it is. A large corporation is cumbersome, and part of its cumbersomeness is due to the very feature we are discussing—following lines of authority. In actual practice we find representatives of several departments often settling a matter fairly expeditiously, and then spending the next several days to catch up in formal letters from one vice-president to another.

But there is good reason for following channels as indicated. This is not all textbook formality, as students having their first contact with an organizational chart, such as Fig. 12, often erroneously assume. To one who has had industrial experience, such a chart is not only real, but a necessity for efficient functioning. The supervisor should know what he is doing or has done in all but the most minor and routine matters. One should take orders or receive permission from his own supervisor, and no other supervisor should be empowered to issue orders to him. To give a concrete instance, the plant superintendent of industrial relations is primarily concerned with efficiency within his own plant, so it is more logical for him to receive his orders from the general superintendent of that plant than from the vice-president of industrial relations in the main offices in Pittsburgh, away from any steel-producing plant of the company. Again, in actual practice a suggestion emanating from the industrial-relations office is usually followed, and the correspondence can be caught up later. But time lost now may be more than made up later by eliminating conflicting orders and confusion, if proper channels are followed. Nat-

urally, if a safety inspector sees a man endangering his own life or that of others, he will not stop to have half a dozen letters written, each following proper lines of authority. But a hazard of no immediate danger should be called to the foreman's attention, and he will then have it corrected or the employee trained further in safe practices.

Another important reason for following proper channels is that the person affected by a suggestion or a definite order is accustomed to receive his instructions through certain channels and any departure from these will cause confusion. A vice-president, for instance, has authority to back up his decisions, either upon his *own direct authority or through persuading another vice-president* to exert his direct authority to accomplish the proposed program. Usually this latter procedure will depend upon a vice-president of industrial relations, finance, or sales persuading the vice-president of operations, since the latter is customarily in charge of all producing operations, and hence next to the president has in actuality the greatest amount of authority in the company, even if on paper he appears coordinate with the other vice-presidents.

There are two other handicaps to following organizational channels strictly. (1) Instructions tend to become diluted and altered as they pass from hand to hand. The individual within the industrial-relations department who is assigned a task has theoretically to go through at least half a dozen persons before he can put the program into effect or make the desired survey, and it is likely not to be reported as he planned it originally. This, however, is often taken care of by the actual practice mentioned earlier of handling things informally by conference or telephone with verbal assent of key executives involved, and discharging the formalities subsequently. (2) Individuals, who may be of considerable talent and experience themselves become anonymous, and the men at either end who do the actual work become lost in the shuffle of letters exchanged, so far as the typed correspondence appears, between their two vice-presidents. It may become difficult for these two individuals to take real pride in their work and to continue to do first-rate work, when they receive no credit or recognition for tasks well done.

IV. Employment and Guidance Techniques

Vocational guidance assists the individual to select an occupation for which his capacities seem to meet the demands, and the employment aspect of industrial relations consists in ascertaining whether the applicant has the capacities for the vacant position. The similarity of the two descriptions suggests that the two techniques have a great deal in common. Both the guidance worker and the employment officer can use such facts as that an automobile salesman should have an IQ of at least 90 and be reasonably extroverted, or that a mechanic need not have finished high school but needs a high degree of manual dexterity.

We are merely looking through the same window from opposite sides, but this fact does suggest a contrast or two. In guidance we are sizing up the individual in terms of one or a group of vocations out of several thousand possible. In employment we select one person for a given vacancy, usually from a number of applicants. This fact is responsible for a tendency to choose the man who is best on an absolute scale, which may not give us the most suitable individual. As we saw in connection with guidance, and again in comparing intelligence status and turnover rate, a man may be too highly as well as too insufficiently qualified for a position. He will probably become bored and resign quickly, thus wasting the investment in employing and training him, and he may not have been as satisfactory on the job as one whose aptitudes are adequate, but barely sufficient. Our task should be to hire workers who will be efficient and will remain on the job a fair length of time.

V. Industrial Relations as a Profession

Industrial-relations work has a fascinating sound, and many people wish to enter the field without the necessary training for it, nor even with a clear idea of the duties and responsibilities involved. The work of interviewing, rating employees, and straightening out difficulties sounds interesting and not especially difficult. However one could hardly name a field calling for broader training, greater originality, and wider personality qualifications. Even granted that the field of industrial relations is still

in its relative infancy, it is the writer's strong conviction that it should be considered a profession, with all that term implies in terms of strict qualifications and training.

Methods and procedures are not fixed, and it is improbable that they will ever become entirely exact. They must operate with flexibility within broad general limits. There are advisable methods of procedure and one can learn much from experienced men in the field, but thereafter originality and initiative perhaps count for more than does formal training.

The reason we stress the professional character of the field of industrial relations is that many of its important aspects have become highly technical in character. The early practice of making an industrial-relations executive of a supervisor who has had long experience within the company and the field of operations, and who is gifted with common sense and a knack of getting along with people, is no longer adequate. Such an individual is distinctly limited in his ability to handle adequately the complex problems in scientific employment, training, job evaluation and rate setting, policy formation, and collective bargaining (union negotiation). The latter, first attaining real prominence in the late 1930's, probably put the finishing touches toward industrial relations becoming a technical and professional field, with all that implies. The untrained man finds himself outsmarted at every juncture and finds that common-sense methods no longer suffice.

The exact training leading up to entering the field is not as yet strictly defined. In its early stages mature men who seemed especially talented in getting along with employees were selected. At the present time a great many leading industrial-relations executives have been trained in psychology, business-administration, and industrial-relations courses. Several universities have lately opened special industrial-relations training curricula. General study of psychology, with emphasis on aptitude testing, personality, social psychology, mental hygiene, and statistical methods, is advisable. Knowledge of economics, sociology, and certain phases of law are valuable supplements.

A person will of course have to acquire basic practical experience before he can hope to become a manager or a vice-president of industrial relations. One who is young enough when deciding

to enter the field will do well to do production work for several months, or even a year or two. He will thus learn the fundamental processes in his company and industry, without which he is in no sound position to employ and train men, handle grievances, settle labor disputes, and conduct union negotiations. Industrial-relations experience is acquired ideally by working a few months in turn in employment, training, labor relations, safety, and other important divisions. This experience should be both in a plant and in the main office, so both sides of the picture are gained. It has been suggested that it is ideal to start as one of the lesser lights in a large company, next become one of the top men in a smaller company, and finally if one's ambitions and qualifications are appropriate, to return to a large company as one of the top executives.

As was suggested earlier, far more apply for industrial-relations work than can possibly be accommodated. The personnel interviewer of a large city department store who in one year interviewed more than 6000 applicants remarked that half of this number wanted to do "personnel" work. Many had not the slightest idea what it was, beyond a vague idea of sitting across a desk and conversing with others, and many could not even spell the term correctly in their application blanks. Actually the numbers engaged in industrial relations throughout the country are not large, and the number of really top positions is relatively few. Up to eight or ten years ago it had the further disadvantage of being considered to some extent a frill, an activity which could be dispensed with in hard times. This tendency has probably largely smoothed itself out, with the advent of the specialized field of collective bargaining in labor negotiations, so one need not face the risk as much as formerly of finding himself unemployed should a depression arise. The amount of work will become lesser in such an event, however, since a recession weakens the bargaining power of any unit of employees, little hiring is necessary, little training beyond reassignment is called for, and the majority of employees retained will be well adjusted and efficient. So the risk of fluctuation will probably never entirely disappear.

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CHAPTER X

EMPLOYMENT PROCEDURES

In this chapter we shall discuss those preliminary procedures which must be followed in seeking and employing applicants; methods of recruiting, occupational description, application blank, letters of recommendation, and job evaluation. In the next three chapters we shall take up testing, interviewing, and merit rating.

I. Major Steps

To obtain a quick bird's-eye view of the entire employment process, we reproduce in Table 28 a list of the nine steps used by a large oil company in hiring service-station operators. These steps are capable of general application, so might be used by any company for the majority of their jobs.

II. Recruiting

The usual sources of candidates to fill vacancies, applicants at the gate and through letters, are likely to be hit-or-miss. The best caliber of applicants may not be secured without active recruiting methods. Aggressive programs are necessary also when labor shortages exist.

A. *Present employees* should be thought of first. Those who occupy relatively low positions may be available for promotion. Not only will one thus obtain a well-oriented and partially trained employee, but morale of all employees will be raised if the working force knows that a policy of promotion from within is practiced. Turnover will be reduced, and loyalty will be raised.

TABLE 28. Outline of Employment Procedure

Step 1. Preliminary interview:
- a. To screen out the obviously unfit.
- b. To turn away unaccepted applicants without loss of good will.
- c. To outline briefly job opportunities to good prospects.

Step 2. Application blank (administered, scored, evaluated).

Step 3. Employment tests (administered, scored, interpreted):
- a. Bell Adjustment Inventory (a personality test).
- b. Minnesota Paper Form Board (a mechanical-aptitude test).
- c. Classification test (an intelligence test)—if time permits.

Step 4. Intensive diagnostic interview:
- a. To evaluate the subjective aspects of a man's qualifications—work habits, attitudes, interests, emotional make-up.
- b. To tell the applicant in more detail about job opportunities—nature of work, training provided, company policies.

(Immediately following the interview, the interviewer will record his judgments on an "Interview Rating Form.")

Step 5. Physical examination.

Step 6. Check references and get a credit report.

Step 7. Referral of acceptable applicants to supervisor for final O.K.:

Depending on the local situation in each division, this may be done after Step 4, 5, or 6, or may be omitted entirely if the employment interviewer has been instructed to make the final decision. As a general principle, however, it is highly desirable to have the line supervisor approve the selection. There is also an advantage in having two judges rather than one.

Step 8. Process all forms needed for new employee.

Step 9. Give specific instructions about reporting for training or work. Give general orientation and indoctrination.

B. *Former employees* may be returned to work if the force is being increased, or may be induced to reenter the company's fold if a position better than they formerly held is open. The personnel office should have retained complete records, not only of their work records, but also of safety performance and periodical ratings, so inspection of personnel cards will give the personnel division an opportunity to select persons whose chances are almost certain to be satisfactory.

C. *Past applicants'* data sheets may be kept in an inactive file for review when expansion is taking place or when vacancies arise in positions for which no one in the present force is qualified. Special care may be taken to retain for future reference application blanks of those who appeared more than usually promising.

D. *Relatives and friends* of present employees have been found in several surveys to constitute a desirable group in terms of efficiency and low rate of turnover, so aggressive efforts may be undertaken to induce employees to urge their relatives and friends to apply. Printed slips may be inserted in the pay envelope calling this need to their attention, with the reverse side constituting an abbreviated application blank. Employees will hesitate to recommend even relatives of poor quality, feeling that their own reputations are somewhat at stake. Care in placement may have to be taken to avoid conflict about subsequent promotion and dangers of nepotism.

E. *Fraternal organizations* may produce fellow members or friends, although there is the risk that they are recommended more for their social than their working qualities.

F. *Trade unions* can recommend members who are unemployed at the moment or are working in less desirable positions. This practice is often looked at askance by the employer, who fears that it may lead to a closed shop. Unions have forced into some labor agreements a clause that new employees must be recruited through union halls and that the employer is privileged to recruit outside only in case the union cannot provide suitable candidates.

G. *Stockholders* may be a minority group, and with large companies are mostly geographically separated from the company's operations, but they may be induced to take an interest in the company's employees as well as to use its products. One can be certain of their loyalty and good intentions.

H. *Applicants at place of business* constitute the principal source of new labor, especially in the unskilled and semiskilled levels, of store salesmen, and of the majority of those entering occupations for which there are no special qualifications or lengthy training periods. While this group may contain many drifters who float from one employment office to another, it must be realized that most hiring is done at the lower levels. And certainly it saves the

time and expense of the more aggressive outside recruiting methods.

I. *Mail applications* are likely to bring a fairly good class of applicants, since one generally has sound reason for applying for a position with a firm at a distance. Well-known firms in the larger cities are likely to attract a flood of applicants from among recent high-school and college graduates in small towns who are attracted by the concern's reputation and the glamour of living in a big city. While these people may be satisfactory so far as their abilities are concerned, they may have serious personal problems of loneliness and difficulty in living on their starting salary, which may interfere somewhat with their effectiveness and may contribute to early turnover.

J. *Advertising* is perhaps most commonly used to recruit in emergencies, although in times of labor scarcity excellent hourly and salaried positions are advertised. In common with applicants at the gate, those attracted by want ads are largely individuals who are unemployed, and are inclined to be drifters. But, as with all forms of recruiting, one must remember that many excellent individuals are temporarily out of work because their company failed, cut down operations, or was subject to seasonal fluctuations. If single positions are described, specifying the training and experience necessary may eliminate the obviously unfitted. Other forms of advertising which have been used have been highway billboards, streetcar and bus cards, handbills, and radio commercials. These cannot get too specific, so the quality of applicants thus attracted is likely to be poor.

K. *College and high-school recruiting* is an increasing form of solicitation. Local firms may give talks to high-school assemblies and may either have a representative at the school or invite seniors to visit the employment office. Large industries send recruiters on nation-wide tours to visit college campuses, in some instances seeking specially trained students such as engineers and in others liberal-arts graduates with commendable college records. The role of the colleges in cooperating with industrial representatives has been discussed in Chapter VIII, and the disposition of graduates after hiring will be taken up in Chapter XIV, when we discuss executive training.

L. *Employment agencies, public and private,* act as intermediaries, and can save both employer and applicant a good deal of lost motion. The public agency has the advantage to the applicant of usually not charging a fee, but on the other hand it may not be so dependent for survival on keeping a good reputation with both parties concerned. Some of the less scrupulous private agencies have been known to place a man in a position that he cannot properly fill; so they will derive two more fees—from placing the man in a second job and from sending a new man to occupy the first position. But they will not last long, and in many cities they are carefully regulated. Since there seems to be some feeling against agencies, perhaps a misapprehension that they handle chiefly casual labor, let us point out that this is not so at all. Presidents, general managers, and others whose salaries run into five figures have been placed through agencies, who often have the task of doing the preliminary weeding before referring applicants to the company seeking an executive. An agency, furthermore, may have several positions along one's line within a space of a few weeks, whereas if one applies directly to a company, it is often a case of one position or none. In some instances, a firm of psychological consultants is empowered with the entire responsibility of hiring an executive except perhaps for the final interview.

M. *Outside recruiting* among foreigners or in less industrialized sections of the country has been used, but usually only when labor shortages are desperate, or when seasonal labor is desired, such as farmers to work a few months in winter.

N. *Training schools for the handicapped* can furnish fine material. Surveys show that persons who are lame, deaf, blind, or handicapped in their limbs have a slower rate of turnover and a lower rate of absenteeism than persons in sound condition. Care naturally is taken to place them in positions which they can handle properly and without danger of aggravating their handicap.

Research should be conducted by each firm which uses several of the above methods of recruiting outside applicants to see which ones actually produce employees who prove satisfactory, earn promotion, and have commendable records in general, and which sources produce only employees who do not repay the company

for taking them on. Likewise, the hiring cost per employee must be considered.

III. Occupational Description [1]

Before any worker can be employed there must be a need for him—that is, some work which he can do must be necessary. The position comes first, chronologically, not the worker. To employ a man in a factory, a store, or in an office someone must have left employment, expansion must be taking place, or a new type of work must have been deemed desirable. In any case the demand for the work is already present before the individual can be considered for a position.

This being the case, we must find out the exact nature of all angles of the work, so that we can select the proper applicant to fill the vacancy, and also so that the applicant himself can decide whether the position is one which suits and interests him. This occupational description is of primary value in interviewing and rating the applicant, but it can also be of service in enabling the personnel division to set up test standards for various positions.

Some of the more important features about an occupation, and consequently about its occupational description, are: duties and functions of the position; education, experience, and training demanded (skill necessary); conditions of work; physical demands; personality requirements; promotional possibilities; pay; and any special items peculiar to the task in question.

It might be remarked that the term "job analysis" is sometimes used synonymously with "occupational description." Actually the two are not properly interchangeable. Job analysis refers more to detailed instructions such as a mechanic might receive before starting a standard job, such as overhauling a vacuum cleaner or greasing a car, for which a uniform procedure is desirable. In

[1] The term "occupation" used in this connection is a little narrower than the same term used to designate a banker, barber, or butcher, referring to the duties of one or a group of persons within one company. An example of our present usage is our own company's definition of a stenographer or an inspector or a janitor.

contrast the occupational description outlines the abilities and experience this mechanic needs before he is employed, and is in no sense a detailed analysis of any single task he is to perform.

A very complete outline of the contents of the occupational description is presented in Table 29 This can cover all occupations from crude labor to positions demanding high mental and manual attainments, although every point need not be covered for every occupation.

TABLE 29 Occupational Description [a]

1 *Name of Occupation and Location* Its symbol in the occupational code, or indexed list of occupations in the organization Alternative names in use Names of allied occupations from which a worker could be transferred with little additional training Names of the divisions, departments, and units where it exists.

2 *State of Duties* Here is given a brief description of the functions performed by the employee rather than the details of how he performs those functions. His responsibilities are described, such as those for the custody of funds, for supervision of other workers, for training subordinates, and so forth A statement is made of the machines, tools, and materials used which involve some special ability or skill on the part of the worker, here, for instance, would be mentioned a drill press or a typewriter, but not a broom or time stamp In cases of machine operation one might include the movements' necessary, as to standardization, parts of body used, and speed Also, whether the worker has to make adjustments and repairs to his machine Additional duties, even if minor, should be mentioned for the sake of complete accuracy and honesty

3 *Conditions of Work.*

a Location	Factory, office, inside, outside, overhead, underground, solitary, gang, and so forth
b. Time	Permanent, temporary, day, night, hours of labor, probability of overtime, peak loads, uniformity of work, and so forth.
c Posture	Standing, sitting, stooping, walking, climbing, reaching, lifting, and so forth.
d Speed	Quick, moderate, slow, varying.
e. Accuracy	Coarse, fine, exacting.
f Degree of automacity	Varied, routine, repetitive.

TABLE 29. Occupational Description [a] (*Cont.*)

g. Health hazards	Ventilation, illumination, nerve strain, eyestrain, physical strain (heavy, medium, light), moisture, heat, dust, humidity.
h. Accident hazards	Fumes, acids, exposure to weather.
i. Disagreeable features	Dirt, noise, oil, and so forth.

4. *Pay:*

a. Method	Monthly, weekly, biweekly, daily, hourly, piece rates.
b. Rate	Range of pay from minimum to maximum.
c. Bonuses, premiums	Attendance, Christmas, and so forth.
d. Penalties	For absences, tardiness, infringement of rules.

5. *Relation to Other Occupations.* Names of those other occupations naturally leading to this one, and names of those higher positions utilizing experience gained in the occupation described; lines of promotion.
6. *Sources of Supply.*

DESCRIPTION OF THE WORKER [b]

7. *Sex.*
8. *Race.*
9. *Nationality.*
10. *Age:* minimum, maximum.
11. *Physical qualities:* height, weight, strength, eyesight; physical impairments permitted.
12. *Education:* common school, number of years required and desired. High school, number of years required and desired. College, number of years required; degree, business-school training; technical training.
13. *Experience:* former employers, years of service with each, kind of work done.
14. *Skill:* trade or kind of work.
15. *Language ability:*
    a. English—read, write, speak.
    b. Other languages.
16. *Personal qualities:*
    a. Appearance and manner
    b. Leadership

TABLE 29. Occupational Description [a] (*Cont.*)

DESCRIPTION OF THE WORKER [b] (*Cont.*)

c. Cooperativeness
d. Initiative
e. Ability in developing men
f. Accuracy, and so forth
g. Judgment

17. *Mental qualities:*
    a. Test range best suited. Eliminate both those who are too low and those who are too high, for reasons discussed in Chapter II.
18. *Emotional qualities:*
    a. Optimistic
    b. Stable
    c. Serious-minded
    d. Happy
    e. Carefree
    f. Contented
    g. Earnest
19. *Emotional disqualifications:*
    a. Nervous or irritable
    b. Timid or shy
    c. Quick-tempered
    d. Moody
    e. Indifferent
    f. Fixed ideas

[a] Quoted with slight modifications, from Scott *et al.* (3, p. 117).

[b] Many of these points are suitable for describing and rating the worker, but are used in the present connection to outline the points it is desired that an individual have for the position. The proper sex, race, age, experience, and emotional qualities will be listed, as well as certain traits whose presence would make the applicant undesirable.

Great care must be taken in obtaining the facts from which the description is prepared. Not only is complete accuracy essential, but the items included must be properly proportioned, so that each is given its proper emphasis. The information should be collected by an expert in cooperation with both workers and supervisors. Having workers fill out a questionnaire or write in essay form a description of their duties might not produce the

most accurate results. It is only natural to point out the difficulties of one's work, and difficult to avoid becoming lost in a maze of details. A trained outsider can be more objective and take a better perspective.

No lengthy explanation of this table is necessary, if the reader will take the time to study it carefully. A few points might be in order, however. Not only the principal tasks should be included but also seemingly relatively minor ones which may contribute materially to one's liking or disliking of the occupation. A rural teacher is usually required to sweep out the room and take care of the stove. Resentment may arise unless all cards are laid on the table at the outset. If a salesman's duties include cleaning up, remaining after hours to dress windows, open crates, and fill out price tags, these facts must be inserted in the occupational description. The writer can bear witness to the effect produced by unexpected extra duties. While working on a delivery truck he and his co-worker were asked occasionally at the end of the day to dispose of a pile of broken crates. Coming at a time when the day's work was apparently completed, this extra duty caused quite a bit of resentment, even though it only took an hour about once a month. A token overtime bonus of a dollar would have been amply repaid to the firm in terms of satisfaction on the part of the worker for having been treated squarely. Also such extra work should be scheduled in the morning, so plans for a picnic or an early movie could be adjusted at that time.

If working conditions depart materially from the usual, they should be mentioned. These would include extreme heat, cold, or variations in temperature; odors; noise; illumination; night work; etc. Special hazards, uncomfortable postures, unusual risks, special responsibilities (including possible financial penalties), all should be listed to give the applicant a complete and honest account of the conditions to be met with if he accepts a position. Perhaps such conditions as a hot or acid-laden room would not bother the majority of applicants, but some will quickly break down. Elevator operators often develop upset stomachs from the constant sudden acceleration and deceleration, and they should be warned against this tendency rather than having to quit the job after working only a few days.

In the second half of Table 29 was the "Description of the Worker." This complements the first half, where the duties of the job were outlined. In fact, it is in effect the guidance angle, as the job description is the personnel angle, as discussed in Chapter IX, for practical use when vacancies arise. We want to know what sort of worker is necessary to take care of the duties of the occupation. These major points are listed: age, sex, race, strength, health, education, special training, intelligence, personality traits, previous experience, and any special additional requirements. If special training is demanded it should be specified whether the applicant is expected to have acquired it by himself before applying, as typing and shorthand, or whether the company supplies it, as in the case of a college recruit hired to sell a highly technical article. Further qualifications for subsequent promotion, and occupations to which promotion may be given, should be listed.

It must be remembered that once an analysis has taken place the position cannot be forgotten. Changes in style and demands, or improvements in machinery and methods will affect the nature of many positions within an organization. Specifications, requirements, functions, duties, and pay will consequently be subject to constant check and revision.

IV. Application Blank

When a person wishes to obtain a position the employer naturally wishes to find out in some detail his qualifications, personal characteristics, training, and previous experience. Some of this information may be derived from letters of recommendation, some from the application blank, some from the personal interview, and others from tests of various sorts.

The application blank is designed to show the position for which one is applying, to record some of the more important items of personal history, and to furnish a nucleus for the permanent record kept of all employees. It reflects some of the capacities, ambitions, and achievements of the applicant. There is some variation in opinion as to the stage in the employment routine when this blank should be filled out. In case the applicant is living out of the city, it may be mailed to him, filled out, and returned. In case he appears in person most companies ask him to fill it out immediately. A few have the candidate first go through a preliminary

interview (described in Chapter XIII) to make sure he appears at least reasonably suited before making him go to the time and trouble of filling out a rather extensive questionnaire.

TABLE 30. Typical Application Blank

1. Name: Date:
   Last First Middle initial
2. Address: Telephone number:
   [To keep out irresponsibles and floaters, and to check potential theft.]
3. Personal data: Age: Race: Birthplace:
   Height: Weight: Health:
   Name any physical defects:
   [To avoid later trouble; often employee can be placed in position suited to any physical limitation he may have.]
4. Marital status: single, married, divorced, widower, widow.
   Number of dependents:
5. Education: Grade school ..... years;
   High school ..... years;
   College ..... years.
   Name subjects in which you specialized or in which you have taken special training:
6. Have you ever been employed by this company? Yes. No.
   If so, in what position?
   Date of entering service:
   Date of leaving service:
7. Have you relatives or close friends employed by this company?
   Give their names:
   [Many companies have found that new employees coming in this personal way prove very satisfactory, tending to remain on the job longer and to be more satisfied.]
   If not, have you any special reason for seeking employment with this company?
   [If the worker has come a distance to seek employment, or has heard the company well spoken of, it is a good sign.]
8. Are you employed at present?
   If so, why do you wish to change positions?
   [Reasons for changing positions are of greatest importance. If a person appears to be a drifter, changing jobs on whims, or because of disputes with authorities, or because of apparent but ill-considered betterment of status, one should beware. He may leave your company with as little genuine provocation.]

TABLE 30. Typical Application Blank (*Cont.*)

9. List previous positions held, in order:
   a. Last position held:
      Employer:
      Work done:
      Length of employment:
      Wages:
      Why left:
   b. Position before last:
      (Same information requested.)
10. Names of responsible persons, known to the company or prominent in their community, who can furnish character references.
    Name, position, address, length of time of acquaintance.
11. Space may be left on the face or on the reverse side of the blank for the interviewer to enter ratings of the candidate as he is talking with him: personal appearance, alertness, ability to express himself clearly, etc.
12. The reverse of the blank may be designed to record the subsequent history of the worker as long as he remains within the employ of the company, incorporating such features as successive positions held, wages, periodic ratings, special commendations or irregularities, disciplinary actions.

Most of the important facts called for on the application blank are outlined in Table 30, together with parenthetically introduced comments in a few cases concerning their interpretation and reasons for inclusion.

A large firm may have more than one form of blank, even though the majority of items may duplicate each other. In Fig. 13 we portray a form used for college recruiting by the United States Steel Corporation. Certain special information may be called for in this case, and certain routine items may be omitted.

V. LETTERS OF RECOMMENDATION

For many positions letters of recommendation are requested. These may be either specific, from former employers or teachers, or general, from personal acquaintances. The specific ones are the more trustworthy, since they deal with past performance in actual working conditions.

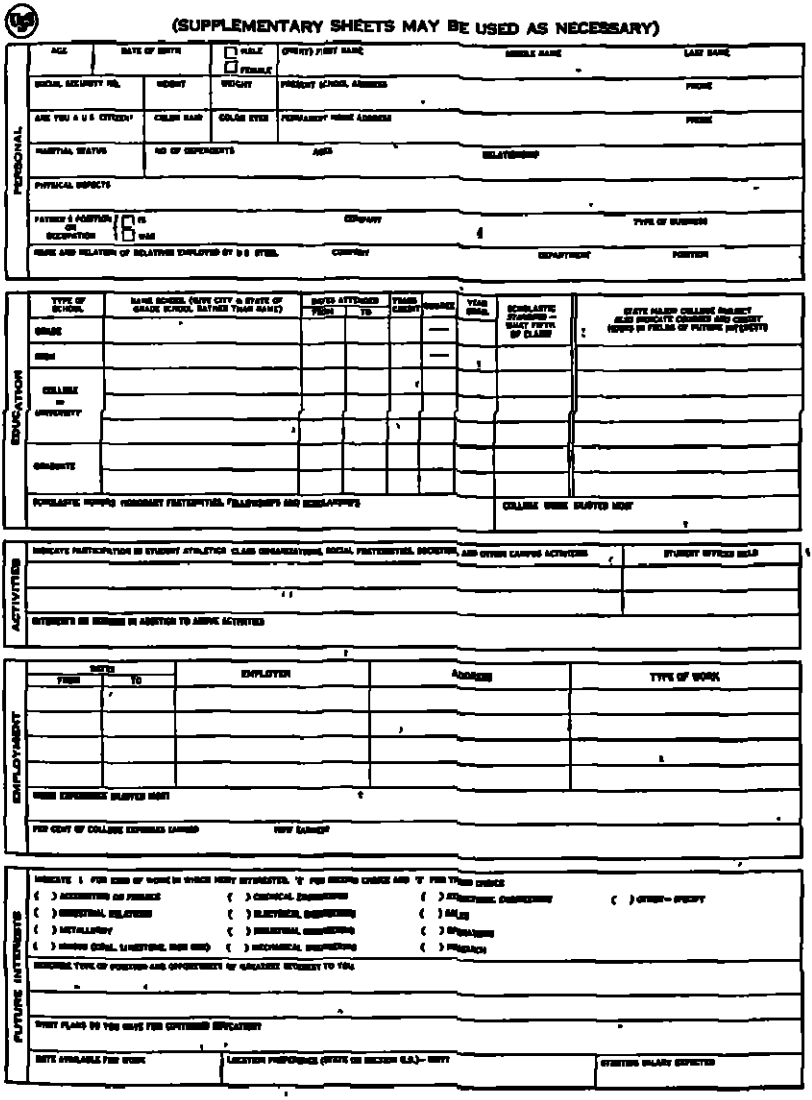

FIG. 13. Application Blank Used in College Recruiting. (Courtesy United States Steel Corporation.)

Many personnel managers feel that letters of recommendation are of very slight reliability, since they usually deal with generalities and since praise is so lavishly bestowed on each individual that it means little or nothing. Granted these criticisms are true, is there anything we can do to make such letters more valid? To dispense with them entirely, which would appear logical in case it were decided that they could never be made at all accurate, would be to eliminate one important facet of information. We can test a man's aptitudes, we can see how he appears in an interview today, and we can find his dates of his working and educational history. But we still want to know more about his career. How did he stack up in the long run? Was he cooperative? Did he show imagination? Was he reliable? Could he get along with others?

A. Perhaps the major source of weakness in letters of recommendation is the fact that a person will only ask for letters from persons whom he believes will have a good opinion of him. He may ask locally prominent friends of the family, the minister, the family physician, the local banker, or a store owner. Among former employers he will ask only those with whom he had a good record. If gaps are noted in the month and year chronology, the personnel office may inquire as to why the applicant had not been working or attending school. The company may insist on contacting the last employer, high-school principal, college dean, or professor in the major field.

B. Another source of unreliability of letters is that the writer naturally tends to include only items which are favorable to his friend and to gloss over his weak points. Anyone who is asked to write is more or less interested in the individual's getting the position, and so will give him the best send-off possible. This results in a vicious circle. Since exaggeration is so prevalent, each person writing realizes that he must overstate to some extent or his protégé will lose out to someone of lesser or only equal ability, but whose credentials have greatly overrated his accomplishments and potentialities. About the only thing to prevent this is pride on the part of the writer of the letter, and a feeling that his own reputation is at stake on what he says.

C. Some companies do not seriously consider miscellaneously written recommendations, but prefer to have the applicant men-

tion several persons who can give specific evaluations. Then they write to these persons and ask them a definite set of questions, or even send a formal questionnaire. (1) A rating scale may be used, similar to those to be discussed in Chapter XIII, but especially adapted for employment purposes. (2) Definite questions can be answered by a phrase, a sentence or two, or an illustrative example of how the applicant had handled some situation in the past.

Is this person independent and self-reliant?
Is he a social being, who works well with others and is liked by them?
Can he handle people tactfully, so that he could take full charge over a small group?
Has he imagination? Can he plan his work out, or does he need to be told at every step just what to do next?
Does his interest in work sustain itself, or is he likely to lose interest and quit in a year or two?
Has he any individual peculiarities which might interfere with success?
Is he reliable, punctual, and accurate?

It is obvious that the rater must answer all these questions, and fairly definitely. The company secures answers to its inquiries on points it deems important for the applicant's success on the job, and no gaps will be left open.

D. If any definite figures can be quoted in the letter, rating will be that much more objectified. Objective scores can include such matters as intelligence-test scores, ascertained in school or from a previous employer; school grades or periodic ratings during previous employment; amount of goods produced or sold in comparison with others working on the same tasks; gains in efficiency; honors won or disciplinary actions taken. Being definite in this way and making an honest attempt to give a substantial evaluation can make a letter of recommendation a valuable selection tool.

VI. Job Evaluation

Assuming the individual is to be offered employment, how much shall we pay him? Typically, the intelligent layman would

suggest three methods of determining this: (1). By fiat; that is, by *offering a certain sum.* (2) By *individual bargaining, the employer* trying to hire him for as little as possible, and the applicant trying to get as much as possible—in which case the applicant has the lesser bargaining power as he is usually the seeker after the job. (3) By collective bargaining through a union or other collective-bargaining group.

None of these are systematic, since each represents bargaining of a nature not unlike bluffing in a poker game. Hence *job evaluation* has been developed, to determine on a sound basis the financial worth of each occupation within the organization. Not only is an absolute basis of compensation attempted, but relations of one job to another and toward local conditions and industry-wide scales of pay are established.

In such determination the occupational description furnishes most of the information. While different companies use different numbers of factors, the following list of nine aspects of duties covers the major fields:

1. Mental requirements
2. Physical requirements
3. Skill and knowledge
4. Training and experience necessary
5. Volume and difficulty of work
6. Supervision required
7. Responsibilities
8. Supervision of others
9. Working conditions

Each of these can be subdivided in several headings. For example, working conditions may include environmental factors, hazards, and costs of tools or clothing. As an instance of the latter, one company awards the employee extra compensation if his normal duties cause safety shoes to be worn out more rapidly than one pair in two months, one overcoat in six months, or more than two pairs of gloves a month. The training factor will take into consideration whether an applicant is expected to have undertaken specialized training on his own, as does a potential secretary

in a business school, or whether the company furnishes the training, as in the case of a salesman of technical goods.

The next step is to arrive at the relative value of each of the factors used. Whereas some companies have attempted to evaluate the extent to which each is demanded in a certain job on a zero to ten scale, or zero to one hundred, it may easily be seen that one item is worth several times the weighting of another. We would not think for a moment that such a working condition as occasional Sunday or evening work demanded of a salesman or exposure to all sorts of weather demanded of a watchman would be worth as much as the volume and difficulty of the work to be handled. One such scale is contained in Table 31.

TABLE 31. Typical Job Evaluation Scale

Major Factors of Elements		*Maximum Point Values*
I. Responsibility for		
A. Safety of others	50	
B. Supervision	50	
C. Materials	90	
D. Tools and equipment	50	
		240
II. Skill, Dexterity, and Accuracy		
A. Skill and dexterity	150	
B. Accuracy	80	
		230
III. Mental Effort		100
IV. Mental Development		100
V. Experience and Training		120
VI. Working Conditions		
A. Hazards	50	
B. Surroundings	40	
C. Excess personal expense	10	
		100
VII. Physical Effort		60
VIII. Fatigue		50
Total		1000

Then each occupation is rated in terms of our standard scale. If a great deal of responsibility is involved, or if a lengthy training period (such as graduation from a college engineering school) is required, the maximum evaluation allowable for this one factor is in order. If a job does not call for supervising others or involves only excellent and comfortable working conditions, zero or near-zero scores will be assigned such variables.

In one actual comparison a watchman and a stenographer were compared on a five-division scale. Each position calls for greater qualifications than the other in some respects, but the totals come out roughly equal. It will be observed in this instance that the point totals come out in dollar salary values. This is not always true, but the points always can be directly converted into the pay scale, with each position comparable to each other one in terms of both point and dollar values.

	Watchman	*Stenographer*
Mental requirements	9	20
Skill requirements	9	27
Physical requirements	25	16
Responsibility	33	22
Working conditions	12	5
	$88 a month	$90 a month

In setting dollar values it is customary to select a number of key positions at various points in the scale for which the compensation is fairly well agreed upon, such as $110 a month for a starting stenographer who has fair typing and shorthand skills, $0.90 an hour for crude labor, or $1.68 an hour for a certain highly skilled machine operation. Then other rated positions, on the clerical or manual scale, are compared with these to establish their hourly or monthly rates.

Thus *the job is priced, not the man.* In so doing the following criteria must be met:

1. Each job must be compensated in accordance with its relative value to all other jobs within the organization.
2. Market differentials must be considered, among similar jobs in the community and as paid by competitors.

3. Individual merit must be compensated, as people on the same job differ in skill, experience, effort, and originality; but differences can only be applied within rigid limits.
4. The plan must be administered consistently and fairly.
5. Provision must be made to adjust to changes in job content.

The same fixed sum is not paid to all persons in the same position, but a range is established, as listed in Point 3 above. For instance, in one company stenographers are paid from $110 to $152 a month. The beginner with little experience receives $110, and as she improves and gains experience is promoted in ten-dollar increments up to $140. The top of $152 is paid only to private secretaries of division supervisors.

Another key principle of job evaluation is that this ceiling is not to be violated. If a girl earning $152 further develops her services so that she prepares letters on her own initiative for the supervisor's signature, rather than waiting to take dictation, or is able to conduct much of an employment interview, she can be given a further promotion only by changing her job classification. Her new position description then will reflect her higher level of duties, a new evaluation is made, and she will be compensated accordingly.

So far this scheme sounds very satisfactory. But there are arguments against it as well as for it. *In favor of job evaluation,* we find these arguments: (1) Pay scale can be justified to the individual and the union. (2) There is less danger arising that one stenographer or one salesman is being paid more than another because of the boss's favoritism. (3) The supervisor is protected against charges that he is stingy and underpays his force, or that he is too generous and thus lowers the morale of other groups. (4) Promotion is placed on a more systematic basis. (5) Promotional possibilities are indicated clearly and unequivocally. (6) In the event of an overall raise, proportional increases can be effected readily. In fact under the application of job-evaluation principles one group cannot be raised in isolation, or out-of-line rates will be created. If a charge is made that one rate is too low, it must be settled by study and negotiation, not strike or threat of walkout.

Arguments against job evaluation: (1) It works best for hourly paid and lower-salaried forces, but cannot be applied in satisfactory fashion for higher administrative and executive employees, since their duties are often unique in character in their company and may not be closely enough specified to render the position susceptible to job evaluation. Certainly the merit of higher executives, say over $10,000 a year, cannot be statistically evaluated. (2) The total range may be inadequate. In our example of stenographers being paid between $110 and $152, it can be argued with considerable merit that the intelligent and faithful secretary after years of experience must surely be worth more than 38 per cent more than a rank beginner. In contrast we note that while most big-league baseball players earn around $5000-$6000 a season, some are paid ten times that amount. It was stated earlier that an extraordinary secretary could have a position of higher title created for her, to reward her adequately for her talents and performance. But this loophole may also be subject to abuse. A supervisor has been known to make a favorite secretary an "industrial-relations assistant" or "office manager" and pay her as much as $50 a month more, yet her duties remain purely stenographic. (3) The whole structure is delicately balanced, so may be thrown out of gear by giving in to pressure for a wage boost for a single group by threats to strike. One such instance was a bottleneck operation, where a crew of seven cranemen threw 5000 employees into idleness, and management conceded an unjustified wage boost rather than sacrifice millions of dollars of production. We can appreciate the pressure on the superintendent, but once having given in, the floodgates were opened and remaining groups could hardly be denied their demands for boosts. (4) Certain positions, apart from top executives, cannot be evaluated accurately. The position of "assistant to president" cannot be made to reflect its true importance on a position description, yet his confidential duties are so important and he can be of such invaluable aid to the president that he is really worth top salary figures. (5) An undesirable degree of inflexibility may be created, where a superlative performance may make a man several times as valuable as when originally placed in the position, and yet he cannot be adequately rewarded. However, one of the prime purposes of job evaluation is to avoid

the pitfalls created by excessive flexibility and opinionative rate-setting, so inflexibility is probably advantageous ten times for every once it creates an injustice. (6) Limits are set at the top which may prevent one from bidding competitively to retain an employee who has received a much higher outside offer. If he cannot be offered a newly created position within our organization, it is better to release him, regardless of how serious his loss may be, than to pay him such an out-of-line figure that his associates have a legitimate complaint and suffer lowered morale. No one man is actually indispensable. Suppose he should die, retire, or become incapacitated? Remember, big executives and even Presidents of the United States have died and the country is still running.

Attempting to summarize these arguments briefly, we conclude that job evaluation is valuable and the only fair and practical way to set and maintain scales of compensation. The few drawbacks and arguments against it virtually vanish in contrast to the advantages gained from handling compensation on a job-evaluation basis.

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CHAPTER XI

EMPLOYMENT TESTS I: GENERAL APTITUDES

I. The Place of Tests

We have already discussed in Chapters III-VI the use of psychological tests in vocational guidance. And, as we pointed out in Chapter IX, the same major principles hold for employment selection as for assisting the young person to choose his most appropriate vocation.

In employment we are naturally interested not only in the applicant's personal history and qualifications, but we would also like quantitative measures of his abilities. None of us would deny that the only way to find out whether a student has really mastered a course is to have him take a written examination, or to verify a person's claims as to his golfing or bowling skill is by an actual contest, or to size up a mechanic's skill is to require him to take a mechanical-ability test. Without such a test we may make many mistakes. A person may look bright and alert, his conversation may seem sparkling, or he may talk with extreme confidence about his abilities, but subjected to a test of some difficulty he may fall down. Conversely, a very brilliant individual may be shy and not a ready talker, and not as good in a social situation as when handling abstract or mechanical concepts. A definite objective *performance is a thing which cannot be denied, is open to fewer* sources of inaccuracy, is capable of later check and study, and constitutes a permanent item of record.

At the outset we want it clearly understood that we are not claiming that tests are panaceas for all employment problems.

Tests alone cannot select workers who are sure to succeed. But quantitatively expressed scores can be converted into figures denoting probability of success. For example, Bennett and Fear (*1*) used a mechanical-comprehension test and a test of hand-tool dexterity for the purpose of selecting operators to run turret lathes, precision grinders, milling machines, and Bullard automatics. A year later supervisors rated all those who used these machines, and it was discovered that 91 per cent of those who had scored A and B on the tests had been rated as excellent workers. Those who had scored below average on the tests almost without exception were rated as below average in performance on the job. None at all who had been employed by means of the test had to be dismissed because of lack of ability; any separations were due to other shortcomings, especially personality factors. Some mistakes are bound to occur, but they are in the minority, and many thousands of dollars are saved in the reduction of turnover.

A second major point is that tests are not to be used all by themselves, to the exclusion of other forms of employment. We still choose to retain the application blank, letters of recommendation, and the personal interview. Tests constitute an additional and important step in the employment procedure.

Major human abilities are often listed under these three categories:

1. Abstract, commonly called general intelligence.
2. Social, the personality side.
3. Mechanical, principally manual dexterity.

For some occupations intelligence is the prime factor; for others personality traits exert the greatest single influence on success; for still others mechanical aptitude, native or acquired, is the principal requisite. Naturally, no occupation demands just a single one of these three to the exclusion of the other two. Most occupations demand a certain amount of all three.

Thirdly, we must admit that certain traits essential to success have not been adequately measured, and perhaps never will be. We recall that in Table 24 we saw that the leading reasons for discharge are carelessness, lack of cooperation, laziness, dishonesty,

and lack of initiative. Tests of these traits are either nonexistent or have shown little validity.

Finally, there will always be some failures, regardless of how accurate or comprehensive our testing program may be. These will occur because of some of the factors just named; because of conflict between personalities; or because of situations arising during employment, such as personal, health, or family troubles.

The history of employment testing presents some interesting features. Practical use of psychological measurement in any sizable scale dates back only to World War I, when intelligence tests were administered to more than a million servicemen, and occupational tests were tried out on certain groups. After the war these same tests, or others which unfortunately in many cases had been rather hastily constructed, were sold and applied with too little caution—and often no standardization. Too broad claims were made. An inevitable setback occurred when employers found out that all personnel problems were not automatically and immediately solved. A wave of resentment arose, and as a direct result the progress of testing was set back nearly two decades.

Actually, the tests themselves were fairly soundly conceived. The error was rather in the excessive claims and failure to admit honestly the limitations that any tests, and these early ones in particular, might have. The concrete result was that many firms which had been using tests abandoned them, and others which were on the point of adopting their use postponed their projected programs. But interest in tests never disappeared, even on the part of their opponents. This was demonstrated both by the large crowds which invariably filled meeting rooms at business and industrial conferences when a program on testing was announced, and by the universal mention of tests when complete employment programs were discussed.

Shortly before World War II many industries were again experimenting with testing programs, and psychological and personnel journals again began to carry many articles on the devising and improvement of tests. With the war the armed services—virtually a complete economic society of their own—were faced with the necessity of selecting and placing men where their talents could be best utilized and where they could be trained into new skills

as rapidly as possible. There has actually been a new wave of enthusiasm in testing in industry for several years, and it is fairly safe to predict that widespread use of tests in the military services will reflect itself in industry. Likewise, we are sure that they will be based on a much sounder foundation this time, in terms of the quality of the tests themselves, their standardization, and more careful interpretation and application of scores.

The extent of actual use of tests at present cannot be precisely estimated, as one has to rely for information upon articles published in personnel and trade journals or upon laborious surveys of one company after another. Many companies, further, keep their employment techniques as a sort of trade secret and prefer not to publish their findings.

To demonstrate this trend, in just the five years of 1941-1946 reports of the use of tests for selection appeared for the several dozen occupations listed in Table 32. No doubt many additional

TABLE 32. List of Occupations for Which Testing Programs Were Published, 1941-1946

Apprentice (several types)
Assemblers
Aviation (many branches)
Barber
Bus driver
Calculating-machine operator
Chauffeur
Civil (public) service
Clerical worker (several types)
Coal miner
Cosmetologist
Cotton-mill operator
Dance musician
Dentist
Electrical worker
Engineer, mechanical
Factory worker (many types)
Foreman
Grocer
Inspector
Laundry sorter
Librarian (several types)
Maintenance
Metal trades
Military (many branches)
Minister
Newspaper boy
Nurse
Package wrapper
Policeman
Railroad engineer
Salesman (many types)
Seaman
Skilled trades (several types)
Solderer
Stenographer
Streetcar motorman
Supervisor, executive, administrator
Teacher (several types)
Telephone operator
Women in military services

tests, some of which may very well have been excellent, have been subjects for experiment but have not been reported in the literature.

II. Intelligence and Personality Tests

Little need be added to the discussion of these tests, of general or abstract capacity, various personality dimensions, or interests, beyond the thorough treatment accorded them in Chapters III, IV, and V, except to point out certain administrative problems.

A. Intelligence

In terms of our tripartite division of aptitudes into the three categories of abstract, social, and mechanical, it is clear that any occupation demands at least a certain degree of abstract or general intelligence. Evidence of this is seen both in the negative fact that persons with IQ below 70 rarely can succeed well enough to be wholly self-supporting, and also by inspection of the lists of crude occupations which can be done by those on the borderline of mental deficiency. A moment's thought will suffice to show that even ditch-digging, popularly used to symbolize the crudest of jobs, requires some planning ahead as well as directing one's attention to what he is doing.

We have made the point that there can be found a critical score in most occupations, a point below which virtually no one succeeds, because the person has not requisite intelligence to learn and *understand his duties. With many occupations possession of intel*ligence much above this level is unnecessary; not only will the person fail to make any more of a success than one with barely sufficient intelligence, but turnover rate usually is higher.

Promotion, however, is usually earned by those higher in the scale, so a given occupation may be undertaken by one who wishes to learn the business from the ground up without expectation of staying at the first job any length of time. This procedure is more from the angle of the individual than the employer. From the latter's viewpoint, however, the brighter person may be considered for eventual executive placement and be given training in various fundamental aspects of the business. It is a truism that a good executive must know intimately, preferably from personal experi-

ence, the details of the daily duties of those whom he is to supervise.

Administration of intelligence tests has become very simple, since they are so well designed that lengthy training and experience are not necessary to administer them to applicants. One of the greatest improvements occurred when directions were printed on the test blank itself instead of being given orally. Thus discrepancies introduced by individual testers were virtually eliminated, and test scores became correspondingly more reliable. Reading the directions and understanding what to do on the test items themselves are usually included in the time allowed. Therefore the examiner has little to do except seat the applicants, read a few simple directions, and keep time. Brief training, principally how to handle a possible emergency, plus watching an experienced examiner administer several tests, will be all the intelligent personnel assistant needs before being permitted to give tests himself. Interpreting the tests is another matter; this necessitates much more training and experience.

It is not our place to suggest which test or tests are suitable for any given company or occupation. There are several dozen reliable and well-standardized tests on the market. Some firms have developed their own, but unless a properly trained psychologist is on the staff it is better to use a recognized and established test. Part of the standardization of a test before it is placed on the market includes drawing up norms, which means a distribution of scores on a designated population, so that one can locate the status of an applicant or an employee in one's own organization.

It is recommended that in a company having occupations covering a wide range of talents, three or four different tests be made available to the personnel division, so that one can apply the appropriate one to applicants all the way from the barely literate who are applying for the crudest job to college graduates who are under consideration for technical or administrative posts.

B. Personality and Interest Tests

Personality and interest tests have not been so widely used in industry as in vocational guidance, because they are more broad than precise. It will be recalled that in Chapter IV we did not

suggest guidance into a single occupation on the basis of a certain introversion or dominance score, but rather into a group of occupations. However, as we constantly emphasize, any additional bit of evidence that may help us in securing an employee who will learn rapidly, turn out to be a good producer, and will remain with us a fair length of time is that much to the good. Even if the improvement is only fractional, resultant savings will be important.

Interest tests have been little used in industry, beyond fairly widespread use in selecting salesmen. Insurance companies in particular have used Strong's Vocational Interest Blank and a few other similar tests rather widely, and with good results. In some cases executive (supervisory) selection has also utilized measurement of this aspect of the personality, since eliminating turnover within this group is especially important. We want to make as sure as is humanly possible that persons admitted to a lengthy training period are and will be genuinely interested, and are not just looking for "any sort of a job." With unskilled and semiskilled positions this factor is not of so much importance; and in addition we recall that the test has been principally standardized on professional and higher business levels.

While personality and interest scores will rarely cause us to reject an applicant from further consideration, they may guide us in properly placing him, and in keeping in mind possible promotional directions. We recall the example of the good worker who is extroverted logically going up the supervisory line, while the introverted craftsman might become an inspector or technical expert. This can be recognized at the time of original employment, and we may even enter this potential future disposition on his personnel record for advice when a higher position is open.

III. Tests of Motor Abilities

Since the duties of production workers in mills and factories can usually be closely defined, it is only logical to devise tests to select them. A large number of such tests have been used to measure various phases of motor ability. In industry it has been the purpose to measure motor skill and coordination in general, with the hope that such skills will have broad applications in predicting proficiency in operating various types of machines or in carrying on

other operations involving speed and delicacy. Critical scores should be set, if possible, in terms of both speed and accuracy.

To state our major conclusion first, *simple motor abilities are practically unrelated and complex motor abilities are so slightly intercorrelated that we must conclude that there is no general motor ability. Success in any operation, therefore, can be predicted only where functions are practically identical with those tested.* In actual testing, this means that there is no possibility of devising a single test which will measure aptitudes of all who apply for work calling for manual skills, simple or complex. Nor can even a battery or series of tests be applied to candidates for positions demanding speed, accuracy, and coordination. Operations are so specific that entirely different tests must be devised to measure potential ability for different positions, such as driving a taxi, sorting out good from poor parts in inspection, or tending a high-speed cotton spinner.

TABLE 33. Major Motor-Skills Classifications

Single-hand speed
Single-hand accuracy
Finger dexterity
Lower-arm and hand dexterity
Two-hand speed
Two-hand accuracy, identical or paired acts
Two-hand coordination, different acts
Hand-foot coordination
General body coordination
Rhythm
Sensory or perceptual discrimination

There is some evidence that makes the situation not quite so hopeless as it may appear; namely, that there appear to be certain groups or "families" of skills. Specifically, it may be that one test may be at least reasonably applicable to various operations involving one type of skill, such as two-hand dexterity where accuracy is more important than speed. Most of the major classifications will probably fall into one or more of the groups listed in Table 33. Possibly the correlations will not be quite so high as with tests especially designed for a given operation in a given company, but the tests may serve the purpose quite well.

One writer on the subject (3) summarized, after describing a number of tests of motor skills:

"We have steadfastly refrained from giving specifications and norms for the foregoing tests to anyone. The tests belong to the firms for which they were designed, and the norms are matters of internal interest only. It would be far simpler for a competent person to design new tests than to try to adapt these tests and norms to a different situation."

Evidence for these conclusions have been obtained by several investigators who have measured motor abilities and calculated intercorrelations among them. One such major investigation was carried on by Seashore (6), who gives the results from intercorrelating eight tests of moderately complex motor abilities.

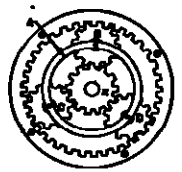
TABLE 34. Intercorrelations Among Eight Motor-Skills Tests

	Ataxiameter	*Pursuitmeter*	*Pursuit Rotor*	*Serial Discrimeter*	*Motor Rhythm*	*Pursuit Pendulum*	*Speed Rotor*
Pursuitmeter	.19						
Pursuit rotor	.12	.29					
Serial discrimeter	—.15	.18	.25				
Motor rhythm	.03	.17	.40	.29			
Pursuit pendulum	.16	.14	.56	.33	.36		
Speed rotor	.12	.09	.33	.08	.63	.23	
Spool packer	.15	.26	.26	.32	.43	.44	.38

While all correlations with one exception are positive, they are so low that no general ability is apparent. The two really substantial correlations, between motor rhythm and the speed rotor, and between the pursuit rotor and the pursuit pendulum, really measure the same functions in two different ways. The average of intercorrelations is a little higher than found in a similar investigation (5) where only very simple tests were employed, such as speed of tapping, card sorting, reaction time, and accuracy of tracing. This trend follows a general tendency among all psychological measurements, that the more complex human abilities are more highly interrelated than are simple functions. Thus, intelligence, being a still more complex trait, has relatively high corre-

lations among the various subtests which go to make up a complete test.

A mechanical aptitude test has been devised by Bennett and Owens (2) in an effort to measure mechanical common sense, the extent to which one has assimilated certain basic physical principles in the course of his everyday living, apart from special schooling. Two sample items are shown in Fig. 14.



11. Which parts turn in the same direction as gear x? (1) Ring A; (2) Gears B, C, and D; (3) Both the ring and the gears; (4) Neither the ring nor the gears; (5) No parts can turn.

With which bicycle could one climb the steepest hill? (1) A; (2) B; (3) C; (4) D; (5) There is no difference.

FIG. 14. Sample Items from a Written Test of Mechanical Aptitude. (Courtesy of the Psychological Corporation.)

While the authors state that their test is still in an experimental stage, they have communicated a few preliminary findings to the present writer. When the test was applied to engineering freshmen and seniors, the bottom third of the freshman distribution was found to fall by the wayside in the course of three years. In other words, many freshmen scored as high as seniors, but there were no senior scores in the bottom third of the freshman distribution. Taking a course in college physics only raised scores on this aptitude test from '39 for freshmen who had not taken the course to 41.5 for those who had. Therefore the test is valid from the point of view of its testing aptitude almost entirely apart from formal schooling. Furthermore, since this is so, and since the lower end of the distribution is weeded out, it would be justified to use this test as one means of predicting suitability to enter engineering school. Without whatever innate aptitude the test does measure, persons

just do not succeed in engineering. They need the particular aspect of mechanical reasoning the test measures.

The mechanical-aptitude test we have just discussed is a "paper-and-pencil" instrument, whereas oftentimes motor tests involve the use of laboratory apparatus, as in the two preceding investigations (*5, 6*) just described. Recently reported (*7*) was a summary of such employment tests, in which there were listed tests of hand dexterity, machine skill, observation, tool dexterity, mechanical drawing, measuring ability, and mechanical skills.

Let us now examine several typical tests of simple and complex motor abilities, with the thought always in mind that there is very little intercorrelation among them.

Reaction time is analogous to a sprinter starting when the pistol is fired. Speed of reaction may be tested in such a simple act as pressing a telegraph key when a light flashes or a buzzer sounds, the brake on a car when a whistle is blown or a pistol fired, or as a choice between pressing the left hand when one stimulus is presented and the right hand when a different stimulus is given. *Serial reaction* is more complex still, and accordingly is closer to actual working conditions than the simpler forms of reaction are. An example of this from daily life is sorting a deck of playing cards into the four suits, with time recorded by a stop watch. For special operations one may substitute materials closely like those used in the particular job, such as colors or forms of thread, shoe laces, socks, toothbrushes, etc. Correlations between simple and serial reaction times are close to zero.

Pursuit tests involve a somewhat more complex eye-hand coordination, and have familiar counterparts in shooting a flying bird, throwing a forward pass not to a player but to where he will be when the ball arrives there, or feeding a punch press between strokes. Several variations of this function have been tested, of which we can mention two. In one the subject follows with a loosely hinged pointer a small target about the size of a nickel rotating near the edge of a phonograph turntable, with an electric counter recording contacts as long as he keeps the point on this target. In another a winding moving pathway is to be followed by means of a needle controlled by a rheostat.

A number of tests have been devised to measure speed and ac-

curacy of *coordination* at various levels of complexity. The three-hole test is a simple one; the subject touches in turn each of the three holes of a triangle on a square board, the score being the number of touches made in a given period of time. In a spool-packing test the subject loads two spools at a time, one with each hand, into a tray, which is dumped when he gets six pairs placed, and then he begins to fill the tray again. One may count the number packed in say two minutes, or time how long it takes to pack ten trays full. This test is analogous to certain industrial operations, such as packing small boxes of toothpaste into a carton. The peg-board test measures coordination of the two hands. The worker has a box of pegs on each side of him, takes one with each hand, and places them in holes in the board. The number pegged in a certain unit of time constitutes the measure of proficiency.

Mechanical assembly tests measure ability to assemble such common items as doorbell, bicycle bell, coin purse, razor, wrench, spark plug, electric connection. Using such materials enables a simple, cheap, and standard test to be applied to all applicants for positions within a range which demands the same general range of activities.

Summary. Since we have made the important point that motor abilities are only slightly correlated with each other, it will be appreciated that the tests mentioned above must be considered only as samples. Operations must be studied very closely in order to devise new tests or adapt existing tests to measure motor coordination as close as possible to identical with the movements demanded in the work. The farther away one departs from an exact duplication of these motions the less predictive value the test will have. A number of actual test batteries will be discussed in the next chapter.

IV. Tests of Sensory Capacities

For certain vocations an individual must have special capacities or aptitudes of various natures, which are at great premium in these occupations, but are of little significance elsewhere. Sensory capacities fall into this category. Examples are the high degree of auditory acuity necessary in a musician, and certain qualities of balance considered essential in an aviator.

The Seashore Musical Ability Tests have been designed to measure by means of phonograph records these six musical capacities: pitch discrimination, tonal memory, sense of time, sense of rhythm, intensity discrimination, and feeling for consonance. These tests are widely used in public schools, to determine the desirability of giving any particular pupil musical training. Similar use by parents might save hundreds of thousands of dollars spent annually in giving musical lessons to musically unfitted children. The tests measure functions which appear to be almost entirely innate, and consequently not subject to training. From findings in music schools it appears that no one who fails to earn a high score can become a good musician, although naturally a high score on the test does not guarantee success. A low score, however, need not interfere with one's personal enjoyment of symphony, opera, or other music.

For a number of vocations it is essential that the worker have normal color discrimination. Color blindness would hamper success in railroad engineers, yard-goods salesmen, haberdashers, and others. It is astounding to most of us to learn that about 10 per cent of men are weak on red-green discrimination. (Women rarely have this deficiency.) Yet a large number who are color weak do not realize that they are deficient in this aspect of vision, since their perceptual world appears complete to them. If red never stood out to them as it does to the rest of us, why should they realize the lack, any more than the rest of us feel incomplete because we do not see ultraviolet? The individual is none the less efficient in 95 per cent or more of occupations, but in those where accurate color discrimination is necessary a deficiency makes success practically impossible.

It might be noted that the term "color blindness" is technically incorrect. Not many are insensitive to all colors (one in 100,000 men), but rather most of those affected have a red-green weakness. The deficiency may exist all the way from a very slight weakness in either or both colors, total red blindness or total green blindness, to complete absence of these two colors.

A study of color vision in dry-goods salesmen disclosed an average of 7.2 per cent of color weakness, as compared with a figure of 8.4 per cent for university students (*4*). But only in the silk

counters did selection appear; such close discrimination was necessary here that success was out of the question without perfect color discrimination. The same is true with railroad engineers, who must work by colored light signals. As to the salesmen, no record was available as to whether there had been a higher percentage of returned goods or other forms of dissatisfaction, but the investigators suggested that such might easily have been the case.

An accurate and thorough test of color discrimination has been devised, which is so simple that it can be applied to an individual in less than a minute. A field of colored dots has numbers which are easily detected by the person with normal vision, but which are either misread or not seen at all by the red-green weak.

A test for inspectors (3) measures tactual discrimination by having the subject feel, behind screens to rule out vision, seven cylinders covered with sandpaper. The task is to arrange them in order of roughness. It was suggested that having only seven gradations was too few; as many as twenty would have probably produced greater discrimination among applicants.

Vision can be tested with or without glasses. In most occupations, and in driving one's automobile, one can readily wear glasses, but in some where there is danger of breakage, blowing off, or fogging because of sweat or steam, reasonable vision without correction must be present. There are several aspects of vision which have practical value in job placement: acuity (fineness of discrimination), absence of distortion or blurring, judgment of depth and of objects at a distance, and focusing nearby objects. The latter two traits are opposite to each other, but the first is valuable in driving or operating a crane, while the latter is essential in inspection of small objects. This latter deteriorates with age, so periodical checkup is necessary, particularly after the age of 40.

In aviation a great deal of work has been done with selection tests. The results of military applications which have been released to the date of this writing are principally in the form of programs attempted, and not statistical summaries of findings, so they cannot be discussed in detail at present. Much of the work, here and earlier, has centered around certain strict sensory tests. A high degree of visual acuity is imperative; in some cases even minor corrections through glasses are not allowed. Depth perception has

been tested, and is one of the more important attributes of the successful aviator. Another sense considered essential is equilibrium, controlled largely by the semicircular canals. This needs to be especially good, since the aviator cannot always depend on his eyes, because of weather conditions, yet must become aware of slight changes in bodily posture. The development of accurate navigation instruments has possibly reduced this human factor. The equilibrium sense may be studied by subjecting the blindfolded individual to very slow and minute changes in posture, to see how quickly he perceives the shift. Dynamic functioning of this same sense may be tested by whirling the candidate in various directions, as in very violent stunt flying, and measuring the extent of dizziness, the length of time required to recover to normal, and possible "motion sickness." Another test which has been used is resistance to effects of altitude. The applicant is placed in a chamber, the air pressure reduced to simulate conditions of high altitude with its lower oxygen supply, and tests administered. Unexpected effects occur, not only loss of consciousness or impairment of judgment, but emotional effects and fantasies. The effects of cold in high-altitude bombing or fighting are perhaps more physiological than psychological, but we may point out that some individuals are much more resistant to cold than others. This is especially important in certain precision work where gloves must be removed.

V. Physical Examination

Most companies require a physical examination in addition to evidence of ability to discharge the work satisfactorily. There are several purposes for such examinations: (1) to make sure the new employee can stand up under the strain of the work; (2) to detect communicable diseases; (3) to protect the worker himself and his fellow workers against accident which sensory or motor incapacity may cause; (4) to detect any slight incapacity, such as hernia, which might be aggravated by heavy work; (5) to assign a partially incapacitated employee to special work, particularly important where a second injury might be especially serious, as in a worker with one blind or impaired eye; (6) to provide a periodic check on present employees, especially executives who are often older men

and are subjected to severe strain; (7) to check on the condition of employees returning after lengthy illness or maternity; (8) to protect the company against large compensation costs.

The actual examination procedure may vary greatly, depending upon which of the above purposes is involved in the individual case. For a sedentary occupation, such as office or store work, there are no severe demands, and a very brief examination will usually suffice. For heavy muscular work one must acertain not only general health condition, but resistance to fatigue and heart strain. Persons responsible for the safety of others, such as locomotive engineers or bus drivers, should be very carefully examined and given periodic examinations every few months—certainly not less than once a year.

Other possible defects to be noticed in certain cases are heart trouble, eyesight limitations, partial deafness, throat infections, abnormal blood pressure, kidney disease, chronic appendicitis, flat feet, skin diseases, injured or missing limbs.

Executive examinations are increasing in generality. The steadily increasing strain of their duties has caused an alarming toll of premature deaths and incapacities. Men appointed to key positions in large companies in middle age often seem to age fifteen years in the next five. Assuming that the strain cannot be reduced, say to the pace of a small-town merchant or lawyer, thorough yearly examinations will disclose early symptoms of heart disease, high blood pressure, gastrointestinal irregularities, cancer, prostate enlargement, and kidney disease. Obviously a high executive in a large company represents a huge investment, and his health is a matter of concern far beyond himself and his immediate family. It is decidedly to the advantage of the company to sponsor this periodic checkup at company expense, and on company premises where feasible, to save time and to make sure the busy executive actually takes the required test.

Placement of the physically handicapped has been recognized as an important problem for at least twenty-five years, was receiving increasing attention prior to the recent war, and was perhaps brought to a head by the numbers of slightly or seriously handicapped young men returning from this war. They desire not charity nor a token job, but employment where they can preserve

their own pride of accomplishment and produce a profit for their employer. Placement is so individual, even within a single company, that we can cite no wide generalities. Positions within the company are studied to ascertain what handicaps, if any, can be permitted if the work is to be performed adequately and safely, without risk of further injury. The 'slight' additional cost and trouble of making such a survey and the extra time spent in placing handicapped individuals is usually more than made up by the steady work performed, lower rate of turnover, lesser rate of accidents, and lower absenteeism. The individual realizes that changing jobs is not so easy, and he puts out extra effort to make good on the one on which he is working. The social contributions of such programs hardly need be mentioned.

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CHAPTER XII

EMPLOYMENT TESTS II: OCCUPATIONAL ABILITIES

In Chapter XI we discussed general tests which might be applied to applicants for various positions. These included tests of intelligence, personality, motor abilities, and special sensory capacities. In this chapter we shall continue the discussion, but shall go on to specific tests of trade knowledge, aptitudes, and skills, which are designed to measure more precisely potential or already acquired skill for particular occupations.

I. Tests of Knowledge

For technical positions it is often desirable to measure the knowledge an applicant has already acquired in his field. This is parallel to a candidate for a driver's license demonstrating in a written or oral test knowledge of rules of the road, how to make certain turns, park, and give hand signals. There are several ways of estimating this knowledge.

A. Published Articles

Along with his application for positions involving research, invention, technical work, and advanced teaching, the candidate is often requested to transmit printed or typed copies of specialized studies he has made. These show that he has knowledge of his field, ability to think creatively, ambition and originality, and clear expression in writing.

B. Essay on an Assigned Topic

An essay on an assigned topic may be required, so efforts of all applicants can be compared on an identical basis. One Civil Service examination, for example, assigned an essay on "Plumbing Sanitation." From such an essay one can judge not only the knowledge of the applicant; but also his ability to think and to express himself clearly on the spur of the moment, since it is part of the examination procedure and is not prepared at leisure in advance.

C. Examination

The applicant may be asked to demonstrate his knowledge by answering a number of questions on technical terms, tools, care of equipment, and precautions necessary under good working conditions. It is recommended that completion or multiple-choice questions be used, rather than the essay form which is more difficult to score. Samples are quoted from a test for general machinists.

A device used in machine shops for holding pieces for handwork is called .....

The process of lining a wearing surface or journal, for the purpose of reducing friction, is known as .....

Two common metals that require the drill point to be lubricated are ..... and .....

It will be observed that these three questions cover apparatus, processing, and knowledge of materials, respectively.

Following are two questions in multiple-choice form, one on knowledge of the subject of bacteriology and the other concerning a process of working with metals.

By the virulence in a microorganism is meant

.... its disease-inciting power
.... its power to adapt itself to unfavorable environment
.... its power of reproducing, or tendency to be prolific
.... its ability to do without free oxygen.

When the shavings made in turning metals come off in large curls and are very strong, it indicates

.... that the tool is dull
.... that the tool is properly ground and set in the machine
.... that the machine is rotating too rapidly
.... that the machine is rotating too slowly.

Another interesting test in the battery for machinist was a large illustration of a machine shop, which the applicant studies for a minute and a half, after which he answers questions about a number of points: equipment in the room, ventilation and heating systems used, and certain shop practices. All of these should be evident enough to someone with experience, but a beginner would spend too much time deducing the significance of each item.

Butcher's knowledge was tested by this series of questions (among others) which can be administered in either written or oral form: These cover terms, implements, knowledge of various meats, and practices.

TEST OF BUTCHER'S KNOWLEDGE

1. From what part are pork chops usually cut?
2. How many ribs are cut to a rib of beef?
3. What are two knives a butcher uses?
4. From what part of a hog do you get picnic or California hams?
5. What is the average weight of sweetbreads?
6. From what part of a hog is salt pork made?
7. About what should a hind quarter of a 500-pound dressed steer weigh?
8. What should a ham weigh from a 150-pound hog, dressed to pickle?
9. What would you call the strip of fat along the back from which the loin has been pulled?
10. How old should a calf be before it is butchered?

Tests of duties constitute an especially important aspect of information about certain occupations, as illustrated by this item from a test for patrolmen:

A patrolman should use his revolver on a man
.... who is breaking the speed limit in an automobile
.... who snatches fruit from a stand and runs when ordered to stop
.... who sets fire to a crowded theater and runs when the patrolman attempts to arrest him
.... who is drunk and disorderly.

It must be realized that tests of knowledge are not all-sufficient. They cover just one phase of competence, and so far as skill alone is concerned omit operations and safe practices. Care must be taken to distinguish between tests of common sense, such as in the last

items for patrolmen cited above, and ones of technical knowledge, as in the butcher's test. Custom determines in most cases how knowledge is to be acquired. Rarely does a company train a stenographer or comptometer operator; she must secure her own training. But certain types of machinists and inspectors are trained from the ground up. Restaurants often prefer to employ girls with no experience as waitress, and train them in their own ways of doing things rather than have to change previously acquired habits.

II. Trade-Aptitude Tests

Trade-aptitude tests constitute the most practical means of selecting employees for positions demanding motor and perceptual skills. They are specifically designed to measure the same types of thinking and performing demanded in actual work, but involving little or no previous training or experience.

A. Miniature Tests

The term miniature test is fully descriptive, because the tasks form a miniature of the duties demanded on the real job. The apparatus is sometimes reduced in size, but the muscular movements tested are carefully designed to be identical with those used in working on the job itself. A good example would be a hypothetical test for a railroad engineer. It is obvious that testing an applicant's aptitude by letting him run a real train would involve considerable human and property risk. So we set up a dummy cab, with all the controls a real engine has, and if possible on full scale. The applicant's speed and accuracy of manipulation is then tested under various conditions. To make such a situation completely realistic we could, as has been done with both locomotive and highway tests, have the candidates look at a screen upon which is projected the scenery as it might unfold before one, with curves, crossings, vehicles approaching toward one or from a side road—situations requiring speeding up, slowing down, giving warning signals, etc.

One excellent example of such a test is that for motormen used by The Milwaukee Electric Railway & Light Company. To vary speed, use the warning bell; apply brakes, and carry on other duties, the operator must have good coordination between hand and feet,

and between eyes and limbs. He must be able to judge the speed not only of his own vehicle, but also that of others approaching from the front or from intersecting streets, as well as obeying traffic signals. These duties must be carried on in largely automatic manner, since the driver has many additional tasks to which he must pay more conscious attention, such as calling off the names of streets, receiving fares and making change, as well as attempting to remember special requests of strangers who wish to get off at a particular destination. Another important objective is to reduce accidents.

This test has two parts. The first is a test of ability to handle properly the control equipment of the streetcar, which includes speed regulator, brake, and warning bell. This is measured by means of lights on a panel flashing on and off, symbolizing different running situations, with the subject handling controls, as shown in Fig. 15. Responses are recorded automatically on a tape, which is later inspected for errors, omissions, and slow responses.

The second test is one of judgment of speed and distance, and is as good an example of a miniature test as one could find. It consists, as shown in Fig. 16, of two toy electric cars which run on tracks which are always close to each other, being in general parallel, but crossing at two points and sideswiping at two others. One train runs automatically, controlled by a mechanism which varies its speed now and then. The candidate is to complete as *rapidly as possible a certain number of circuits with the train* which he controls. Naturally, the more rapidly a motorman can cover his run the more service he renders the public, provided he achieves his speed with safety. If he proceeds highly cautiously and unduly slowly he might escape accidents, but he will give less satisfactory service. Therefore the two factors must be balanced in this miniature performance test; the applicant should keep his train going at a good rate of speed, but avoiding collisions, derailments, and stops. The purpose of varying the speed of the other train is to prevent the applicant's setting the speed of his car at a constant rate and always keeping the two trains well apart, for example at opposite sides of the track.

That this system of testing succeeded in selecting better motormen than those who were previously chosen by the usual methods,

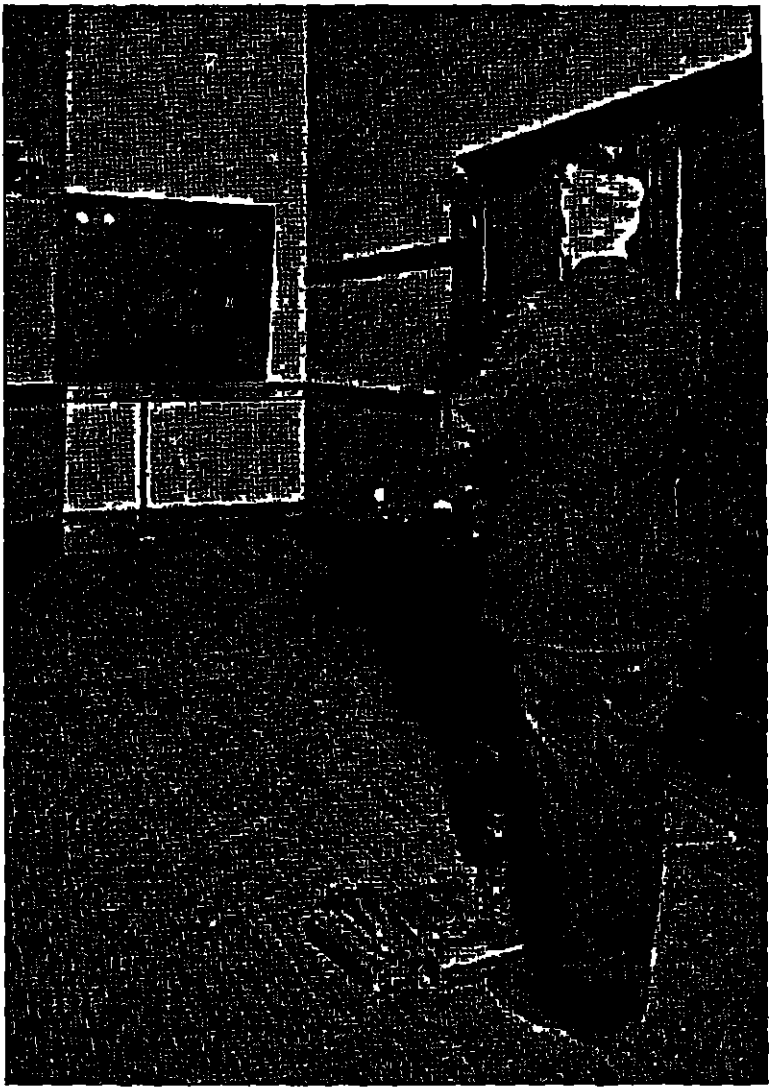

FIG. 15. Reaction Test for Motormen. This tests the ability of the applicant to make the *correct* response at the right time without becoming confused It also measures speed in forming correct *reacting habits*. (Courtesy The Milwaukee Electric Railway and Light Company.)

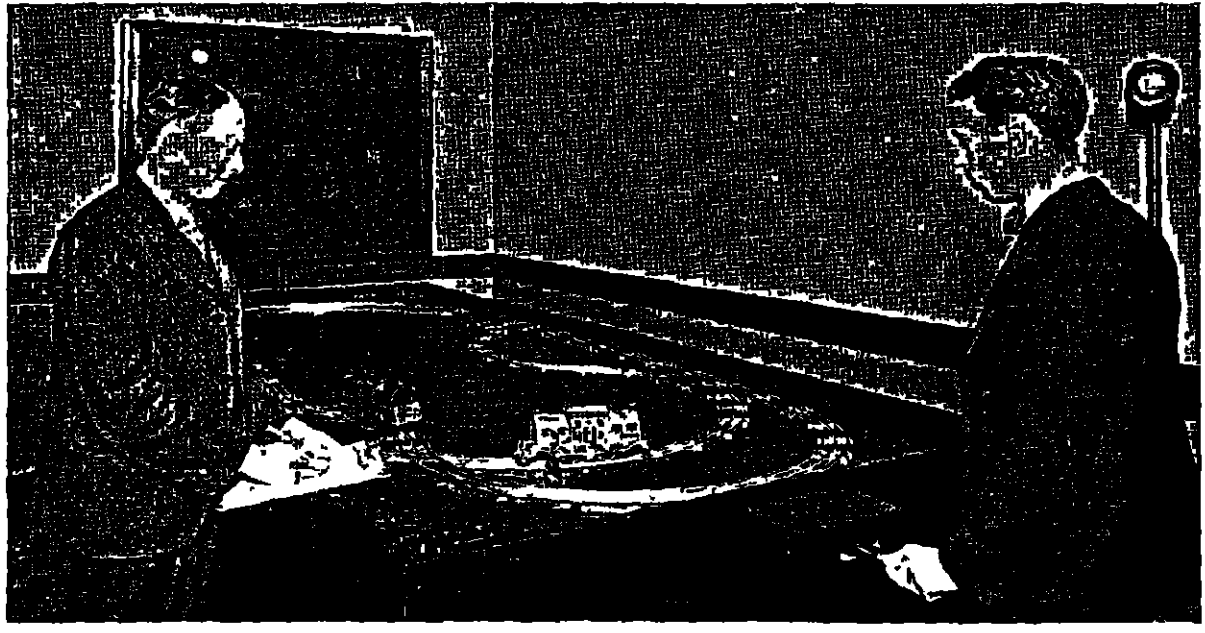

FIG. 16. Test for Judging Speed and Distance Applicants for positions of motorman, truck driver, and bus driver must be able to judge speed and distance accurately. The test consists of two cars running on separate tracks. The darker one runs continuously and is electrically controlled. The lighter one is controlled by the applicant. He must complete a designated number of laps in as little time and with as few accidents as possible. (Courtesy The Milwaukee Electric Railway and Light Company)

such as personal interview and evaluation of previous experience, is seen in the figures summarized in Table 35. In all respects it is evident that the group selected with aid of the test proved to be more stable than those employed the previous year without benefit of the test. The turnover was materially reduced, which of course raises the efficiency of the whole system. About equal numbers of both groups resigned, but a voluntary resignation has little bearing on skill, so this point sheds little light. Perhaps the most striking figure is the great reduction of discharges; with better methods

TABLE 35. Comparison of Motormen Selected by Tests Versus Those Employed Without Test

	Not Given Test		*Selected by Test*	
	Number	*Per Cent*	*Number*	*Per Cent*
Motormen employed ..	163	100	166	100
In service at end of year	98	60	119	72
Out of service	65	40	47	28
Resigned	27	17	33	20
Discharged	35	22	10	6
Due to accidents	23	14	1	0 6
Other reasons	12	7	9	5

of selection, less than a third as many were dismissed. The number of those who had been involved in sufficiently serious accidents to warrant discharge was reduced almost to the vanishing point—one man out of 166.

As another means of validating the tests, a number of employees were given the tests and their scores were compared with ratings of efficiency made by their supervisors. The highest rated group had an error score of 30; those judged to be about average made 35 errors on the test, while those rated as poor workers averaged 57 errors. These figures suggest that there is not a great deal of difference in test performance until we get below a certain level, although the rank orders of the three groups by both estimates agree perfectly.

Another excellent example of a miniature test was one designed to aid in selecting taxicab drivers (9). The tests were installed specifically to reduce turnover, reduce accidents, and select men who would earn more money for the company. A mental-alertness

test was first given, then the performance test. In the latter, the subject is seated in a dummy cab, which has seat, steering wheel, accelerator, clutch, foot and hand brakes. Signal lights flash to indicate symbolically various situations which might arise. The subject's responses are recorded on a tape, which shows both speed and accuracy of response. Thus alertness, speed of reaction, and errors which were taken to indicate potential carelessness, were recorded. The test takes 15 minutes.

The test was validated by comparing error scores with actual numbers of accidents employees experienced. Setting an arbitrary score of failure at five or more errors, those who made a passing score of less than five errors had had only 1.3 accidents a man, while those who made a score which henceforth they considered as failing had averaged 3.0 accidents. Furthermore, 46 per cent of those who made no errors had never been involved in an accident, while only 19 per cent of those making one to three errors and 13 per cent of those with four or more mistakes on the test had escaped mishaps.

An interesting trend appears when the relation between speed of reaction and numbers of accidents were compared. Those in the middle have the fewest accidents, the slow and fast persons more. The slow men appear unable to avoid trouble, while those who are fast are likely to trust a little too much to their skill and tend to become careless or downright reckless.

In the same study, comparison between intelligence-test scores and earnings showed similar trends. The highest earnings are by the men who rate fairly high, but not at the very top. Beyond a certain point intelligence is of no value, and it is suggested that men of much higher intelligence than one might expect to find in this occupation usually have deficiencies in other directions, hence are not especially fitted or eager to succeed. They may have been failures in other jobs, or are undertaking taxi driving merely as a stopgap while waiting to land another job.

Having inspected the motorman's and the taxi driver's tests of the miniature type, let us look over several other tests and test batteries which have been devised to select people for a variety of occupations. Those to be discussed here primarily involve motor skills, but some batteries use personality and other tests as well.

B. Transportation

In addition to the tests described in some detail above, several other phases of testing have been developed for passenger, bus, and truck drivers; railroad engineers; and airplane pilots.

Careful selection of railroad engineers in Spain reduced accidents by at least half. High intelligence as well as quick reactions were essential. Streetcar operators in a Belgian city were selected by tests of auditory-reaction time, judgment of distances with moving objects meeting or overtaking others, complicated choice reactions with hands and feet, and auditory as well as visual stimuli. Total scores were divided into seven groups, and 95 per cent of those in the top three groups were rated by supervisors as good or very good.

Selecting pilots has become increasingly complex, due to higher speed, altitude problems, blackouts, loss of effectiveness due to low temperatures, diving maneuvers, etc. Even a high degree of selection is becoming an incomplete solution to certain problems, since mechanical features of equipment, instruments, and clothing must control some of the conditions encountered—no human being can withstand certain speed and pressure conditions. Not only have potential pilots been tested, but tests have been used to select aviation machinists, electricians, radiomen, aerial photographers, and even parachute riggers. One question for aviation mechanic and one for radioman are quoted as samples.

> The number of *turns* by hand that should be given the crankshaft of an aircraft engine before starting is: (1) none; (2) at least two; (3) at least four; (4) at least six. ...
>
> In a convoy, the distress signal "QQQQ" is sent when the convoy is attacked by: (1) a submarine; (2) an enemy merchant ship; (3) a warship raider; (4) an aircraft. ....

C. Skilled Trades

Skilled trades of various sorts have been subjected to testing techniques. In one group of 1400 skilled apprentices the correlations between the entrance examination and a final test of proficiency was only +.18, but when the original selection procedure was supplemented by several intelligence and sensory-motor tests

it was raised to +.33. In another group, tests of mechanical ability and aptitude correlated with the final proficiency test to the extent of +.36, but no further increase was produced by adding a measure of intelligence to the battery. As evidence that potential ability, or ability measured after only brief experience, gives fairly accurate prediction of ultimate status, the correlation between ratings at the end of the training period and seven years later was +.53. While none of the coefficients cited in this paragraph indicate a high degree of agreement, and while it must be realized that many cases of inaccurate prediction would occur, it must also be realized that hundreds of cases of early turnover would be avoided, many very poor apprentices would not have been hired, and a higher average level of production would be achieved.

Loom fixers in a cotton mill were tested on a fifteen-item mechanical-assembly test, and were rated as to proficiency by four different overseers. The correlation between the two measures was +.42. It was suggested that if industry and interest, which enter into productive efficiency, could have been included in the test battery in addition to aptitude and general skills, a higher agreement would have been attained.

D. Wrappers and Sorters

Wrappers and sorters in department stores, laundries, and drug houses have been measured on tests calling for discrimination and delicacy of coordination. The Minnesota placing and turning tests were used in one study with temporary wrappers and packers in a department store. These tests involved the "checkerboard" apparatus shown in Fig. 5. In placing, the disks were inserted into the holes; and in turning they were picked up with one hand, turned over, and replaced by the other hand. The correlations with ratings were only +.35 and +.23, respectively, for the two tests. Experience, however, was a large factor; hence the test was more one of acquired than of potential skill. The Minnesota clerical test gave better predictive efficiency than the other two tests which might have been supposed to be more closely related to the functions demanded.

For inspector-packers in a pharmaceutical supply house, where the tasks involved filling, stoppering, examining for presence of

extraneous foreign matter, labeling, and packaging the bottles, a series of tests was administered, such as paper form board, rate of manipulation-turning, rate of manipulation-placing, numbers-comparison test for clerical workers, and a test for mechanical ability. Only the paper form board and the two manipulation tests were found sufficiently valid, and a correlation of +.72 was obtained with ratings of supervisors and forelady. This, it might be commented, is a remarkably high degree of agreement when a supervisor's rating is involved.

E. Clerical Occupations

Let us examine several tests for clerical positions used by R. H. Macy & Co. of New York City. The comptometer operator's test includes eight problems of various natures. The first three are straight addition, individual values varying from $30 to over $5000, mostly having odd cents, with 15 to 25 numbers in a column. The next three problems are of the accumulative type, such as so many yards times the value per yard. The seventh problem is addition of yardages, and the final one is an accumulation of yardages, certain numbers of various items of different lengths. Ten minutes are allowed, and nearly perfect accuracy is demanded. The writer might observe, after watching several girls take the test, that one must be very accurate and rapid to pass. It was amazing to see the speed and sureness of some who were computing, yet few completed it much ahead of time.

The cashier's arithmetic test involves a somewhat wider range of problems, but each is of simpler nature than those of the comptometer's test. These involve addition and subtraction, addition of several items of a purchase of various quantities and prices, and computation of the value of certain quantities (yards, dozens, or number of items) of goods at so much each. There are also transactions involving making change and balancing up an uneven exchange.

A test for file clerk includes a list of 37 names followed by the 10 cities where these individuals reside. The applicant is to rearrange the names in alphabetical order under the cities to which they belong. This naturally calls for both speed and looking ahead, sizing up the whole list before writing down anything, so that no

name will be discovered later which occurs earlier in the alphabet. A card-sorting test has also been included in the file clerk's program. This test is borrowed directly from the laboratory, but is sufficiently like filing operations so that results can be transferred. Number filing is also included.

A battery was devised for testing potentiality to operate hand- or crank-driven calculators. Of nine pencil-and-paper tests, three were finally chosen: number-dot location, arithmetical computation, and speed of tapping. The number-dot location test involved three columns of nine dots each, upon which one would indicate a number such as 576 by encircling the correct dots, the left-hand column representing 100's, the middle one 10's, and the right-hand one units. Two minutes were allowed, and the number completed correctly constituted the score. Arithmetical computation called for doing such problems as subtracting 550079 from 680668, or multiplying 4397 by 7. In the tapping test one placed dots with a pencil inside open circles, possibly half the diameter of a shirt button. Examinations were given every sixth assignment during the training period, being 20-minute tests of problems in addition, subtraction, and multiplication, as well as complicated machine problems. The final correlation between a combination of the three tests with the criterion of proficiency was +.57. The author feels this figure is a little lower than it actually should be, since the homogeneity of the subjects produces a narrow range of talents and artificially lowers agreement between the two variables.

F. Nurses

Nurses' qualifications have been studied in a number of investigations, but with little genuine success. Except for the negative facts that those in the lower half of high-school grades and intelligence distributions rarely succeed in nursing school, that one test purported to measure nursing aptitude does not actually do so, and that in the main personality-test scores do not correlate with supervisor's ratings, the investigations have contributed little of a positive nature. One study comparing nurses with college women did show that they were more neurotic (which is contrary to expectation), but lower in self-sufficiency and dominance. In another

study a 30- to 60-minute interview by an experienced psychologist produced a correlation of +.78 with grades in nursing school, +.40 with supervisor's ratings, and +.81 with the two sets of ratings combined. This is a high degree of agreement, but one may question the reliability of the two criteria—grades and supervisor's ratings—since they are both based on opinion of the supervisor, and not truly an indication of effectiveness of caring for a patient.

G. Patrolmen

Among a group of suggested tests for patrolmen are three which attempt to measure accuracy of observation. A patrolman should always be on the alert for unusual incidents or for evidence that something out of the ordinary has happened, and should be both quick and accurate in observing things which do occur, such as motor-vehicle accidents. The first of these tests of observation is perception and memory for automobile license numbers, exposed for about three seconds.

The second test for accuracy of observation portrays the street scene reproduced in Fig. 17. The reader might duplicate the following directions and test himself on this. The picture is to be studied for three minutes, and one then answers the following questions, of course without further reference to the picture:

1. What is the place of the accident (street intersection)?
2. How is the policeman attempting to identify the chauffeur?
3. What is the condition of the weather?
4. From what state is the automobile?
5. On which side was the automobile struck?
6. What is the number of the motorman?
7. What shows reckless driving on the part of the chauffeur?
8. At what time of day did the accident occur?
9. What is the date of the accident?
10. What is the number of the streetcar?
11. To whom does the automobile belong?
12. Name two injuries to the automobile.
13. Name two things which indicate that the chauffeur was killed rather than only injured.
14. What is the first person you would call as a witness of the accident?
15. What is the route of the streetcar?

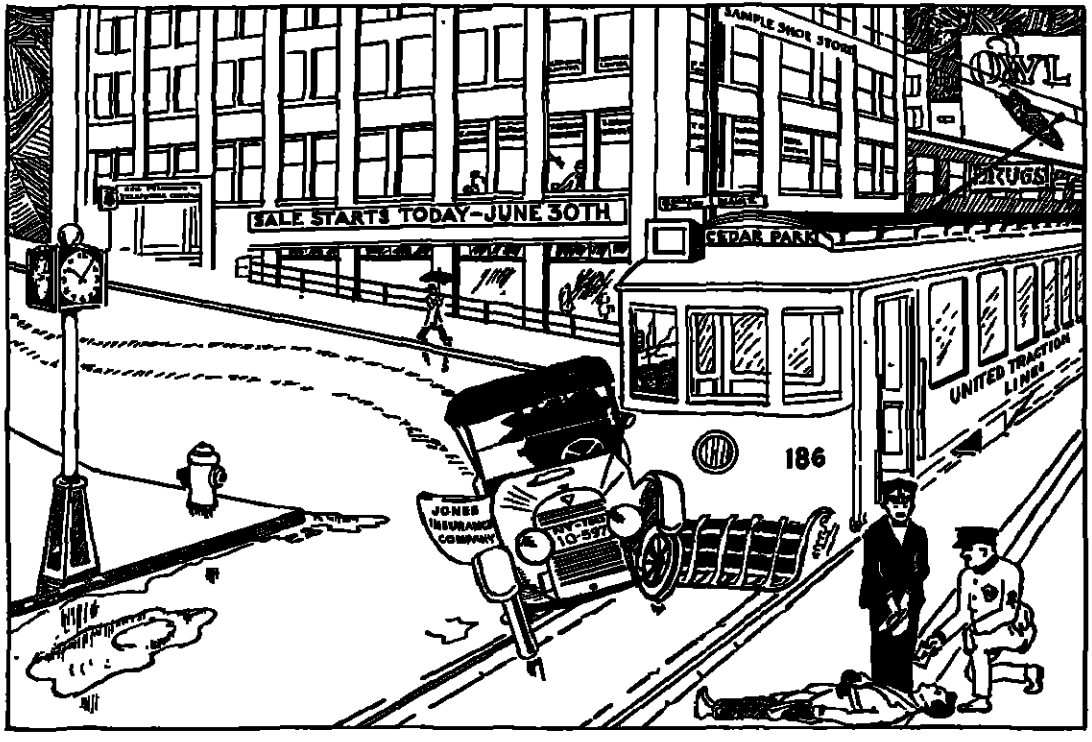

FIG. 17. Drawing Representing an Automobile Accident, to Be Used in Connection with Test on Accuracy of Observation. Study this for three minutes, then answer the questions on page 274.

One might criticize a number of items in this set of questions, such as the date, the street corner, and the owner of the damaged car, since they would either be obvious or could be readily ascertained later. However, the principle is the important matter; to see how many items the individual can pick up in the three minutes allowed. A newly hired patrolman may be instructed as to what valuable bits of information he should notice and record when an accident, holdup, or robbery occurs, but there are always unexpected incidents, and the confusion usually attending a mishap stands in the way of complete efficiency, so some items of information may have to be pieced together later on the basis of memory. Hence such a test as this is valuable.

The third test of observation and memory is of faces. Pictures of ten persons are shown, in profile and full-face views, and the applicant is allowed three minutes to study them. The subjects are of various builds, characteristics, and skin color. Later one has to select the original ten from a second group of forty-eight.

H. Supervisors and Salesmen

Supervisors and salesmen have been the subject of a great deal of study, particularly along personality and social lines. Naturally motor skills, which have been important in many of the occupational tests considered in the last few pages, are not of especial importance in supervisors, except possibly in training new employees by a foreman, say of a machine shop, when such training is a part of his regular duties. Further, foremen and other supervisors usually come up from the ranks, so the testing of motor skills is not of particular consequence at this juncture. These occupations will be discussed later.

III. Test Batteries

We have used the term "test battery" several times without defining it, but the reader may have already judged by the context that we were referring to selection not by means of a single test, but by using a combination of several.

There are two principal ways of such summarization of test scores. One is by determining weights for the various tests and arriving at a total (see Table 36). The second leading method is to

develop a profile for the occupation, as described in Chapter VI, and compare the applicant's profile from the same tests with this standard profile.

Ideally we determine in a systematic manner the relative importance of each test that we have concluded to retain in our final battery, and assign to it an appropriate weight. One test, for instance, may be twice or three times as important as another, or one and a half times as important. A sample battery of tests is shown in Table 36.

TABLE 36. Test Battery for Senior Clerk (*8*)

	Time (min.)	*Weight*
Test 1. Office work and terms	10	2
Test 2. Understanding and following written directions	15	1.5
Test 3. Comparison (of original with copy)	5	0.5
Test 4. Alphabetical filing	10	0.5
Test 5. Recognition of business transactions	5	1
Test 6. Reading (selection dealing with business practice and office management)	5	1
Test 7. Business arithmetic	10	1
Test 8. Memory for office directions	7	0.5
Test 9. Education and experience (an evaluation, not a test)	10	2
Totals	77	10

There are two principal ways of determining these weights: (1) assigning importance relative to the time normally spent in the different duties of the job; or (2) in terms of the magnitude of correlation between test score and total rating of job performance. The first method appears simple enough, but is only applicable when a different test measures aptitude for each aspect of work. A more general test, such as intelligence, would naturally overlap many parts of one's work; and the various subtests of many aptitude batteries, such as of clerical aptitude, would be interrelated. The size of correlation between test score and job performance rating, on the other hand, will determine accurately

the mathematical importance of each test. This procedure follows the same principles used in connection with the prediction of college success discussed in Chapter VIII, and also some of the same lines of reasoning followed in job evaluation.

One unique element of a battery is an item which is given no weight, but which covers qualifications which must be satisfied before one is even considered for candidacy. While education, speed in alphabetizing, or degree of extroversion may be quantitatively estimated, there may be permitted no variation whatsoever in some traits. For instance in a battery for patrolmen there appears this notation: "Character investigation—no rating or weight." In other words, if an applicant does not appear with an unblemished record, he will not be considered, no matter how strong his aptitudes or other qualifications may be. Similarly normal color vision, good depth perception, minimum height or strength, freedom from certain diseases, or graduation from an accepted engineering school may be established as indispensable characteristics, and no departure at all permitted. An illustration from the service was recommendation by psychiatrists not to return to active duty combat fatigue cases which showed symptoms of sleepwalking.

IV. Test Validation and Standardization

A. Reasons for Standardization

We cannot compose a test like a poem, making up items from thin air, regardless of how experienced we may be. We must determine by actual investigation these three major points: (1) that the test truly measures the function we are studying, (2) that it is an accurate and consistent measure of that aptitude, and (3) what each score means in relation to any other score earned on that same test.

Point 1 above is really the most fundamental, since the other two can only follow if the test is actually a measure of the functions called for in the occupational duties. For example, unless the miniature test for streetcar motormen shown in Fig. 16 actually measures the abilities called for in full scale on city streets, or the dummy-cab test of taxi drivers actually correlates with safe driving performance, or the comptometer operator's test will predict speed

and freedom from errors in daily working performance, these tests must be admitted to be valueless. This problem is especially critical with paper-and-pencil tests, such as for a driver's license. One may be able to draw how to make a left turn at a busy intersection, or state the three things one must do when parking on a hill, but will he actually do these things?

B. Steps in Validation

In general, the following steps are followed in validating a proposed test.

1. Analyze the demands of the occupation to devise items which will actually measure aptitude or achievement along those lines. If it is desired to test aptitude alone, care must be taken to eliminate experience and training, for among applicants there are some who have done similar work for another company, or have studied the subject, say in vocational school. Achievement tests, if used, should be fair to all workers of equal training or experience, whether they have been trained in Trade School A or B, or have worked for Company X or Y.

2. Test present workers of known ability, to see if the better ones earn the highest scores and if the poorer workers make low scores. This does not furnish final validation, as a test designed to measure aptitude on the part of untrained workers is usually somewhat affected by experience on the job. But this is a valuable first step to take under any circumstance.

3. Try the proposed test on at least 100 new candidates, at first in a research way, hiring them with present methods, but keeping scores on file for later check with success on the job, as specified in Step 2 above.

4. If the test has proved successful in Step 3, it can be applied as an integral part of the employment procedure with new applicants. Note that we said as *part* of the procedure; it is intended to supplement, not supplant, other procedures, such as the interview, letters of recommendation, and analysis of data supplied on the application blank.

5. One may wish to make minor refinements as the test is actually applied, as time goes along, as job contents may possibly change, and finally as the level of applicants may vary.

C. Selection of Items

(1) The occupational description furnishes the requirements of the job, as mentioned above. It should be studied carefully to include all traits of aptitude or acquired skill, as the case might be, which are demanded. (2) These items should be in proportion to the time spent on each major division of the job. (3) If knowledge is to be tested, great care must be taken to exclude those which a layman might pick up, and to include only those which are common knowledge to the expert, not obscure items familiar to those who may have studied at one school or from one particular textbook. The writer has seen one unfortunate civil-service examination—to select a state psychologist to study defectives, juvenile delinquents, and adult criminals—prepared by an individual who had had only a single course in the field and who in preparing the test consulted only one out-of-date text in beginning psychology.

D. Reliability

The test must be an accurate and consistent measure of whatever it tests. The computation of reliability need not be discussed here (one may consult any standard text on statistics), but we need to understand its significance. It is most easily explained by describing an unreliable test as one which does not produce the same result each time performances of identical quality are rendered. It is like an elastic tape measure, which will give different results on successive readings of the same distance, or a cheap bathroom scale on which one's weight may vary many pounds from time to time. If we have set a critical score of 60 before we accept an applicant into employment, it is highly important that performance of acceptable quality will consistently produce a score of 60, or very close to that figure. It is realized that psychological instruments are not as accurate as those of a surveyor, but we should attempt to confine fluctuations to as small a range as possible. The smaller the departure from true score, the more reliable we say the test is. The only mechanical way to increase reliability is to make the test of adequate length. Naturally the more items, the less influence chance will exert. If a fairly brief test is shown to be somewhat unreliable, we can raise its reliability adding more

items. Aside from this method of control, reliability can also be enhanced by careful design of the test, and in this the process resembles that of validation.

E. Ease and Reliability of Scoring

Ease and reliability of scoring are important considerations, especially where any sizable number of applicants will be tested. True-false, multiple-choice, and completion items are rapidly scored, and many more points can be covered in the same amount of time than if an essay form of examination is employed. Furthermore, different scorers will wind up with the same total, and leniency or severity of grading will be eliminated.

F. Difficulty of Test

No one can foretell in advance how easy or difficult a test may be. This is especially so since the expert devising the test is usually a man of high general ability and usually also of specialized knowledge. In accordance with approved testing procedure, scores should cover a wide range, so that superior, average, and mediocre applicants are clearly differentiated. It is ideal if the difficulty can be so balanced that the median score is around the 50 per cent mark, and there are no perfect or zero scores. Items are sometimes lined up in order of difficulty from easy to severe, the last few being so hard that no one should be able to answer all of them correctly.

G. Items Should Work Selectively

A properly validated test has each item scrutinized, as is the total test score, to make sure it differentiates between the good and the poor applicant. This may be accomplished by dividing the test group into three classes, superior, average, and inferior. Then, temporarily ignoring those in the middle 50 per cent, we see if the top quarter of those taking the test has a higher percentage of success on each item than does the lower quarter. For a concrete instance, an item would be considered discriminative if say 75 per cent of those in the top quarter answered it correctly, and only 25 per cent of those in the fourth quarter. If, however, about half or about two thirds of each group happened to get the item correct, that item is unselective, hence is so much dead wood and

does not belong in the finished test. In standardizing the test one will try out several times the number of items he expects to use, and retain only those which work selectively. A relatively brief test with well-chosen items will work as effectively as one several times the length which has been prepared without this item analysis. The writer knows of one such test of intelligence, which with 90 items administered in 30 minutes to high-school seniors produces as high a correlation with freshmen grades as another test of more than 300 unselected items which takes nearly an hour and a half.

H. Critical Scores

Critical scores have been mentioned previously. In an employment test we may set as many as four breaking points along the scale, as shown in the following hypothetical table.

TABLE 37. Sample Critical Scores

0-39	Virtually no chance of success, so applicants are not accepted.
40-59	Doubtful area; applicants are not accepted unless there is an acute labor shortage.
60-74	Applicants who score in this range have been found to become successful almost without exception, so they are accepted provided other qualifications are satisfactory.
75 plus	Applicants uniformly turn out superior and are usually promotional material.

I. Success on the Job

Success on the job is naturally the ultimate criterion of success, against which all employment procedures must be validated. One may have noticed that several different ways of estimating this have been quoted. Just what does constitute success on the job? Actually there is no single such criterion, nor is there any which is entirely without objection. Even a baseball pitcher's won-and-lost record, which seems objective and simple enough, is complicated by such factors as the standing of his team and his own ability to win crucial games. A high production record in a factory

may be overshadowed by lack of cooperation, frequent absenteeism, dishonesty, or any one of a dozen other factors.

Measures which are commonly used to estimate job success are: (1) gross production or sales; (2) earnings; (3) percentage efficiency; (4) quality of work, meaning absence of spoiled materials or freedom from accidents; (5) success in acquiring job skills during the training period; and (6) foreman's rating, which is open to the usual charges of subjectivity, which will be discussed at some length in the next chapter. We must, however, use the measure or combination of measures which seems likely to provide us with the best available index of success, even granted its imperfections, and validate employment procedures against this.

V. Limitations of Tests

We have credited tests with rather wide possibilities in selecting suitable applicants. At times we have indicated that test scores were not perfect indices of future success on the job. Lest the reader make the assumption, which we did not intend or desire to convey, that tests are better than they really are, let us gather together and list the principal limitations.

1. The test itself may be poor.
2. It may be too short, hence unreliable.
3. The test may not have been standardized prior to issuance, hence scores are meaningless.
4. The test may be inappropriate for that vocation.
5. It may not work for this company, even though it may have been well adapted for another company.
6. Poor administration, by an untrained or careless examiner, spoils scores from the best test.
7. Faulty interpretation by one who has not had sufficient study or training in testing and test interpretation also invalidates measures.
8. Tests may be oversold; they are interpreted as being 100 per cent valid and reliable, instead of being recognized as useful but admittedly imperfect measuring devices.
9. Conditions may change, so a test which worked once may no longer predict accurately.

10. The ability or aptitude may not be measurable, such as honesty or level of ambition.
11. The idea of testing may not have been sold to workers (and perhaps unions) at large, and tests are not taken seriously, hence invalidating results.

In spite of these possible limitations of tests, which center around poor design, poor choice, poor administration and faulty interpretation, the writer feels that much useful information is gained from their use. Tests do provide information which cannot be learned in any other way, and with proper choice and use, they can do much to select a better grade of employees and to reduce turnover.

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CHAPTER XIII

INTERVIEW AND RATING

I. Purposes of the Interview

The majority of personnel men feel that the interview is the most valuable single device used in employment. Past performances are not sure indices of future performance; one may do better or more poorly. Recommendations are noteworthy for their exaggerations and inadequacies. Tests cover only a limited portion of abilities and do not disclose many immensely important personality traits. The interview covers these points and many others, reviews facts mentioned in letters or on the application blank, and summarizes the whole picture.

There are three principal specific functions of the employment interview: (1) to get information from the applicant to determine in part whether or not he has the requisite ability for the position; (2) to acquaint the applicant with the nature of the company and the details of the position for which he is applying; and (3) to effect the initial contact for the company and to make the new employee a friend of the company.

Admittedly the interview has its shortcomings, but no one has been able to devise any substitute by which one can obtain the same information. The interview will probably always remain a central feature of hiring procedure. At the same time, our goal should be to ascertain progressively more and more *objective* facts: test scores, years of experience, accomplishments in previous jobs with other employers, actual behavioral incidents which reflect the true personality, etc. Regardless of these efforts, it seems very un-

likely that there will be devised any method of ascertaining certain traits except through the interview.

Another advantage of the interview is that it is flexible enough to detect an attempt to get by with deception as to qualifications or past experience. Occasionally a person obtains a job by falsifying, but in nine cases out of ten this deceit will only result in eventual failure, since he lacks the necessary qualifications to succeed. In the interview, questions may be asked in fairly rapid succession and may be worded in such a way that the applicant who has not really had the experience will be unable to give satisfactory answers. Thus he can be eliminated before actual damage or gross incompetence results.

II. Preliminary Interview

In large companies which employ great numbers of people it has been found advantageous to install a rapid means of weeding out those applicants who are obviously unsuited or for whom there is no position vacant at the time. Particularly in times of widespread unemployment a large number of persons will apply for positions without qualification or genuine ambition, beyond a vague desire to "get a job." The large majority of these must be eliminated with as little waste of time as possible. Therefore, a brief preliminary interview takes place before the candidate is asked to fill out an extensive application blank and is allowed to go through the more thorough and lengthy personal interview.

As a concrete example of this preliminary interview we shall describe the procedure used by R. H. Macy & Co. of New York City. This department store has long been noted for its progressive personnel policies, and it enjoys a reputation of being a good place to work. So it attracts many applicants, especially since it employs over 10,000 workers, and in common with all large city stores has a high turnover rate. All these facts mean that an efficient personnel system is essential, both to handle the large numbers and to attempt to diminish turnover by proper initial selection and placement.

Some years nearly 200,000 applicants have been granted this preliminary interview. It is unnecessary to point out that this is

a huge number, demanding speedy methods. In spite of this, the interviewer cannot be gruff or hasty, as this large number naturally includes thousands of potential customers. If treated well these applicants will feel that the store is doing all it can for them, even if they are refused a position; but if harshly treated they may withdraw their patronage from the store as well. With a manufacturing concern this point might not be quite so important, but cannot be entirely overlooked.

The applicant writes on a small slip of paper his name and the position for which he is applying, and hands this to the interviewer who is stationed at a window like a ticket booth. The interviewer has a list of vacancies, and has a general idea of the principal qualifications for these positions. A few seconds to no more than a minute will be spent with each applicant. A few routine questions are asked, and the interviewer tries to size up experience and possible capacity, as well as noticing general appearance, behavior, and manner of expression. The great majority are weeded out on these two grounds: no open position, and obvious lack of capacity to fill any vacant position.

Occasionally someone who applies for a position for which there are no vacancies appears unusually promising, so he is questioned with the idea of uncovering capacities in other directions or of keeping him within the organization by placing him temporarily at some related task. For instance, an experienced and apparently promising applicant to sell men's suits might be asked if he is willing to handle shirts or other apparel until a vacancy arises in his preferred line. Or one with rather poor appearance or strong foreign accent might be placed in the stockroom, where his experience and aptitudes might be utilized, but where he does not meet customers.

If the applicant seems on this brief inspection to be suitable to fill a vacancy, he is asked to step inside the office to fill out the formal application blank and receive a personal interview. Otherwise he is told courteously that it is regretted that there is nothing available for him at present, and it may be suggested that he return in a few weeks or months when there might be an opening.

III. The Personal Interview

A. Purposes

Usually after the applicant has been sized up in the preliminary interview as being at least tentatively suitable (or has made arrangements by letter or telephone) for the desired position, he is asked to fill out the application blank and await his turn for the personal interview. During this step a large part of his suitability for the job is determined. We may define briefly the essential purpose of the interview as a careful attempt to size up the capacities of the individuals in terms of the occupational description, to see if he has the characteristics demanded for the position.

Another purpose, unfortunately too little observed, is to acquaint the applicant with the nature and ideals of the company and in particular with the details of the position for which he is applying. It is only fair to tell him as much as possible—a fair picture, not too glowing, nor attempting to hide any unpleasant features. Ideally the interview should be a two-way interchange; it is just as fair in every way for the applicant to expect the company to demonstrate it is a fit place for him to work, as it is for him to show he is fit to employ. Yet many companies forget this angle, even toward employees they have already hired.

B. Setting for the Interview

Now that we are ready to undertake the interviewing there are a few questions which must be decided. First, who is to do the interviewing? Before personnel divisions as such were installed, the supervisor in charge of each department usually did his own hiring. For several reasons this did not always work entirely satisfactorily, especially since this practice presupposed that a man who had been placed in his work for his supervisory or technical abilities also possessed ability to interview and evaluate applicants for jobs. The advantages of centralization of personnel functions were lacking in such cases. Even if interviewing is carried on in the personnel office, the supervisor of the department for which the candidate is applying can, and probably should, talk to the applicant in a second interview.

In contrast to the preliminary interview, which at best is held in semiprivacy only, the more extensive interview is held in strict privacy. The interviewer has a room to himself, and just one applicant at a time is admitted.

If interviews are held by appointment, the interviewer may be partially prepared by having before him data pertaining to the applicant: his letter of application if he originally applied that way, his application blank, possible letters of recommendation. It will pay the interviewer to study these a moment or two before the applicant is admitted.

The duration of the interview cannot be estimated; rather it might be said that it should last until the desired information has been obtained. The usual range would probably fall between 10 and 15 minutes, with less time consumed for a routine position and much more when a highly responsible position is in question.

C. Preparation for Interviewing

To be of genuine value the interview should not be haphazard. It should be carefully prepared. The first and foremost point is that the interviewer must understand the nature of the position and its requirements in detail. Preparation for this should consist in definite training and experience, not merely from consulting occupational specifications. For this reason it is desirable for a person who desires to become an interviewer to work a certain length of time in each of the various departments for which he may later assist in employing workers. Thus he will know all qualifications, not merely a few of the more obvious. He will also be better able to answer questions which the applicant raises. Most of these will not be entirely unexpected, but some might be embarrassing to an incompletely prepared interviewer.

Next, the interviewer should know exactly for what he is looking. With a good working knowledge of the position and the position description sheet before him and possibly with some additional detailed requirements sent in by the superintendent of the department concerning the particular vacancy to guide him, he should be able to conduct the interview in a well-organized and straightforward fashion.

D. Greeting the Interviewee

The interview is commonly considered to be more or less of an ordeal, much the same sort of thing as a written examination or a visit to the dentist. The applicant feels that he is being looked over in a very critical manner, that the interview is entirely a one-way proposition, and that he must be careful to be at his best every moment. From both theoretical and practical standpoints this is a faulty assumption. Not only should the interviewer ascertain astutely whether the applicant is suited to the position, but he should also make him a friend of the company. A kindly attitude not only serves the function of causing the worker to do better work after he has been employed, but it makes the interview more of a success. Granted the time of a trained interviewer is valuable, it is still a good investment to devote a minute or two to casual pleasantries, putting the interviewee at his ease, and gradually working into the more pointed questions.

E. Conduct of the Interview

Asking the applicant questions about previous positions held is perhaps the most appropriate starting point. The person himself naturally knows more about his past work than anyone else, and he is immediately placed in the position of informing the interviewer. He is flattered, and has free rein to tell what he wishes.

After all, the function of the interviewer, like that of the psychiatrist, should be to listen as much as possible, and to learn thereby. The interviewer should only participate in the conversation to the extent of guiding the applicant along desired lines and he should allow him to talk as much as possible as long as he keeps within these limits. As a proof of the value of this, in one investigation stenographic copies of seven employment interviews were made, and were rated in order of merit. In the poorest interview the interviewer had done two thirds of the talking. Other common faults were such as failure to establish rapport, groping for leads and openings, and lack of "terminal facilities" when the time came to close the interview. It is imperative that the interviewer carefully prepare his questions in advance, so worded that the crucial facts will be elicited.

If one listens carefully and notes not only the words used, but attitudes expressed, he will find out many things about the worker's comprehension of the position he has held and that for which he is now applying, his general outlooks, certain personality characteristics, eagerness and enthusiasm, how he got along on his last job, and why he left or is anxious to leave. Even if a man is well trained and efficient, he will not be of much service if he is inclined to stir up trouble or drift from one job to another.

Let us inspect a concrete example. The writer has seen a skillful interviewer encourage self-expression in an applicant in the following manner. Looking at the application blank, he asked: "I see you worked for Blatz and Company last . . . what sort of a store is it? Is it a high-class store, with a wealthy clientele? Or is it a middle-class place, or one dealing with cut-rate merchandise? . . . Tell me about it. . . . What did you sell? . . . Did you sell all the goods handled in the store or did you specialize in one type, or in one price range? . . . How did you get paid—salary or commission or both? . . . What were your average weekly earnings? . . . Did they use high-pressure methods or were your instructions to let the quality of the merchandise impress itself on the customer?" This line of questioning is brought out gradually and skillfully, of course with ample time for replies by the applicant between successive questions.

One should allow the applicant to express himself in his own words, and should not put questions in such a way that a certain answer is predisposed.

Great care must be taken not to develop favorable or unfavorable prejudices. One may immediately like an individual because of some physical or behavioral resemblance to a good friend or some well-known person of recognized merit. Religion, race, shape of nose, color of hair, style of clothes, vivid neckties, lodge pins, and even one's name—all have been known to influence judgments of interviewers, entirely apart from the genuine merits or weaknesses of the interviewee.

To show how easily judgments are influenced, a study was made of ratings given subjects in person or from photographs, wearing glasses in one case and without them in the other. The bespectacled individuals were rated as more intelligent, more industrious,

and more dependable. In the photos, honesty was also added as a virtue when subjects wore glasses, but for some reason this attribute was not assigned those seen in person (7).

One should always be on the alert during an interview to notice any additional bits of evidence which are not definitely on one's list to check. These might be such as an unpleasant disposition which might antagonize persons whom the applicant might meet, evidence of future development toward a position of higher rank, special training or aptitudes along lines other than those indicated, or physical characteristics which might unfit the candidate for doing successful work in the position for which he is applying.

IV. Rating

All during the interview the interviewer is sizing up the applicant, with his judgment becoming more and more clarified as the conversation proceeds. The final decision is made from data secured on the application blank, disclosed during the interview, letters sent in by previous employers, tests of ability or knowledge which may be given subsequent to the interview, and the medical examination.

This final decision may be made at the termination of the interview, if it is felt that all necessary information has been acquired. Some companies have the applicant return to the interviewer after he has taken tests and a medical examination, and in some cases has interviewed the head of his prospective department. Naturally these latter aids to selection will be used only if the applicant appears predominantly suitable during the personal interview. On return to the interviewer all records on tests and the medical examination are inspected, added to previously obtained data, and the final decision is made.

The individual may be rated on different traits during the interview, or just after he has left the room. If it is done during the conversation it is preferable to use a rating scheme which is as simple as possible, to save time, to enable the interviewer to concentrate on the interviewee as much as possible, and to keep the applicant at his ease without it being made too obvious that he is being quantitatively rated then and there. It is perfectly feasible with a multiple-choice check list to rate a man without his knowl-

edge, and at the same time to prevent the interviewer from forgetting any impressions.

To bring out some of the more important considerations in sizing up an applicant for a position the following suggestive outline is presented. Some of the information may come from the application blank, but it is sized up together with data of a more personal nature, and the whole is fitted together to form a total picture of the suitability of the individual for the position.

A. Objective Qualifications

These are ones which can be estimated and recorded objectively, in terms of numbers, rank status, classes, or comparisons.

1. *Intelligence* is most accurately measured by a test, although the interviewer may note general alertness and common sense.

2. *Education,* both its extent and the attitude of the person toward it, are to be noted. Marks in school give indication of both aptitude and application, since the individual who was not sufficiently interested or motivated will have performed below his true ability. But why was he not interested, or why did he fail to put forth proper effort? Just how much weight should be given educational records will depend on the position and age of the applicant. If a man around 40 is applying for a semiskilled job, formal schooling will count for little or nothing. But a recent college graduate may have little else tangible for rating except his academic record.

3. *Technical training:* The question here is primarily whether the individual has had enough training, or whether he can acquire the knowledge or skill in a short time.

4. *Experience* is judged from positions held in the past, which may be discussed in detail during the interview.

5. *Success in previous work,* as well as the fact of having done it, is especially important. The number of positions held during the last few years indicates much concerning the stability and efficiency of the person. The reasons for leaving previous places, if the true causes can be discovered, may give some indication of future behavior.

6. *Promotional possibilities,* as well as suitability for the present position. Some persons are capable of taking care of their present

work, but will never advance no matter how many years of experience they might accumulate.

7. *Physical condition:* age, sex, health, strength.

8. *Home conditions and marital status:* A person who has dependents to support will usually be more dependable, more regular in attendance, and more hesitant to give up a job hastily, particularly if such change might mean removal to another city. An unmarried girl often does not take her duties especially seriously, as she is usually living at home and uses her earnings largely for luxuries. With probability of marriage she is less interested in working hard for advancement. Married women similarly often work more for a higher plane of living than for necessities, so a job is not so indispensable.

B. Personality Qualifications

There are a number of less tangible elements, especially those relating to personal characteristics, which should be observed during the interview. One does not need to delve separately into these, but can observe them while questioning the applicant about the objective points just discussed. For example, while a man is describing his last position he may pick up a pencil and start drumming on the desk with it; he may get tangled up in his exposition and end up in more or less of a muddle; or he may wax bitter in regard to the treatment he received on the last job. Here are three personality traits which are displayed while other points are under more apparent consideration.

One should note such points as:

1. Characteristics which will make for success or failure in the particular position.
2. Mental alertness.
3. Ability to express himself.
4. Social traits.
5. Outlooks and attitudes.
6. Energetic or apathetic.
7. Introversion-extroversion.
8. Egocentrism; selfishness.

9. Neurotic tendencies: health, chronic complaints about working conditions, poor adjustment to past environment, worries, excessive daydreaming.

All of these points, in regard to both the objective and the personality characteristics, will not need to be observed in all cases. For some positions many of them can be ignored as involving unessential traits; and for other positions certain aspects of ability or of personality traits not mentioned above may be of extreme importance. Ability to observe these traits while the interview is in progress, or to bring them out by means of subtly worded questions, is a major characteristic of an expert interviewer.

Some specific comments given by experienced interviewers in sizing up suitability for salesmanship positions are reproduced below.

"Lack of aggressiveness. This person will tend to let things take care of themselves, instead of going out to meet the situation and sell as much as possible. In a large store the clerk must greet people, take care of them rapidly, help them to make their decision quickly, and sell as much and as high-priced articles as possible."

"She has not enough taste, or experience along the right lines, to sell high-priced articles and those tending toward the luxury type."

"Seems rather lackadaisical; we want genuine enthusiasm."

"He is a bit older than the optimal age for breaking into a new system, so would probably lack adaptability."

"Is overconfident; quite likely would be unwilling to take advice and to do things our way."

"This applicant seems barely on the line of suitability, would always be a mediocre worker, and would never earn a promotion."

"He has too oily and swarthy a skin to be selling in the men's clothing department. Has good ability, however, so we can offer him a stock position."

V. Construction of Rating Scales

Rating scales may be used for several distinct purposes. (1) Those used during or immediately following the employment interview are usually very short and simple. (2) The most complete scales

are employed for periodical rating of employees, to watch progress, detect as early as possible any signs of faults developing or "going sour" on the job, and evaluate for promotion. (3) Rating scales may be sent to recommenders, and at the foot there is usually allowed space for a paragraph or two of general comments. Because the second type of scale is most complete, we shall devote our attention primarily to the periodical rating scale.

Fig. 18 shows an excellent example of such a scale. This is used by a utility company in one of the country's largest cities. The scale has several excellent features which we wish to call to the reader's attention. First, the traits are well chosen, in not being too many in number for a busy supervisor to rate on behalf of several dozen employees in his charge, and in covering essential items. Second, definitions of the traits enable each rater to evaluate each trait identically. Otherwise there might be some diversity of interpretation, and the scale would be thereby rendered that much less reliable. Third, the five-point multiple-choice check list is that recommended by most authorities. It is ideal to have an average, an evaluation of somewhat above and below average, and of very excellent and very inferior. Less than five points does not permit fine enough gradation, and more than five choices calls for more refinement in judgment than is actually possible for a rater in an opinionative evaluation. Finally, reversing ends of the scale eliminates one of the commonest errors in judgment—the halo tendency.

This *halo tendency* is one of the most common faults in any sort of rating, whether on a formal rating scale or in casual expression of opinion in daily life. It consists in assigning identical or largely identical ratings to an individual over a variety of traits, which probably reflects the general overall impression. In other words a rater tends to give a slightly superior person a "B" rating in virtually all traits, or to give almost all "C" grades to one he considers average. He fails to abstract each trait from the entire personality. But we will readily admit after a moment's thought that everyone has superior, average, and below average qualities. No one is superior in every respect, and the most despicable character must have one or two redeeming features. Because the term "halo" is sometimes misinterpreted, probably since it is a symbol of goodness, let us emphasize that it does not apply in our present

PERSONAL RATING REPORT

EQUITABLE GAS COMPANY
DISTRIBUTION DEPARTMENT

NAME _____

DIVISION _____ LOCATION _____

Please judge the employee on the qualities listed below. Each item on a continuous scale from low to high checked with some symbol. Note that the lowest and highest ratings are not each divided into two or three degrees. Place a check (✓) in the space above the headings in the position which most nearly expresses your judgment on each quality.

Consider the employee's work since the last rating period and show by a check (✓) whether he has performed satisfactorily or gone ahead in each of the qualities listed to the left.

						Has Done Best	Little or No Change	Has Improved
1. QUANTITY OF WORK. Consider the volume of work produced under normal conditions. Disregard errors.	Very slow worker	Is some below average	Average	Turns out good volume	Puts it over, consistently big producer			
2. QUALITY OF WORK. Consider neatness and accuracy of work. Regardless of volume	Exceptionally accurate practically no mistakes	Very few errors	Normal accuracy	Frequent errors	Very poor quality			
3. JOB KNOWLEDGE: Consider his working knowledge of the many aspects of his job as had through experience, education and specialized training	Inadequate knowledge of his work	Insufficient knowledge of some parts of job	Adequate knowledge, knows job sufficiently well	Well informed on practically all points	Expert			
4. SAFE PRACTICE. Consider his care in the use of equipment and tools and the care he exercises in avoiding accidents to himself and others. Consider his observance of safety rules, or other words is he a safe worker?	Expert study safe in his habits at work	Careful in trying to avoid accidents	Fairly safe worker	Not apt to be careless about his work	Quite safe minded and thoughtful of others			
5. ALERTNESS. Consider the speed with which he masters new methods and grasps essential facts. Consider also his ability to retain that knowledge	Slow; needs constant supervision	Apt to overlook job essentials; needs frequent supervision	Average; performs job well; needs little supervision	Learns well; seldom has to be instructed more than once; needs little supervision	Grasps complicated ideas very quickly; needs very little supervision			
6. DEPENDABILITY: Consider the extent to which he can be counted on to do his work conscientiously, thoroughly and efficiently; the extent to which he is conscientious in his job when unobserved; and the reliability of his statements and reports.	Outstandingly reliable; can be counted upon completely	Dependable	Generally reliable	Sometimes careless; requires more than normal supervision	Cannot be relied upon			
7. COOPERATION AND ATTITUDE. Does he like people; is he efficiently work on a cooperative basis with fellow workers and with his supervisors?	Gives aid very reluctantly	Is inclined at times to resist some of assigned work with others	Generally cooperative	Good team-worker	Goes out of way to cooperate			
8. JUDGMENT. Consider his ability to apply judgment and common sense to the every day job and to keep his head under unusual circumstances.	Frequent errors of judgment; asked for his advice	Judgment faulty at times; referred to him sometimes	Does fair; fairly good thinker	Judgment sound as a rule	Has exceptional judgment. And is not confused under unusual conditions			
9. INITIATIVE AND CREATIVENESS. Consider his ability to try to find a better way on his own without waiting to be told. His ability to make practical suggestions for doing things in a new and better way.	Highly resourceful and original	Will go ahead on usual or fairly routine assignments without suggestions	Shows satisfactory resourcefulness	Resolves worker, makes helpful suggestions	Unresponsive			
10. PERSONALITY. Consider the effect he has on people with whom he comes in contact on the job, and upon the public. His standing with fellow employees.	Creates obstacles	Unfavorable impression	Rolls up satisfactorily	Favorable impression	Exceptionally pleasing personality			
11. APPEARANCE. Consider his habits of personal clean-ness and personal appearance as he is given and read as he should be as a result of the nature of his job? Does he have any peculiar physical characteristics?	Exceptionally fine appearance	In his case of above this is of importance	Generally up standard for type of work	Somewhat careless about appearance	Slovenly			
12. LEADERSHIP: Consider his success in securing the cooperation in handling those who have had and efficient contact with him. (Do not rate LEADERSHIP unless employee exercises supervision.)	Frequent trouble with those whom he supervises	Fair to commend conditions	Handles workers well	Controls fairly	Has ready and effective leader			

NOTE. Please list here any physical handicaps such as poor eyesight, poor hearing, loss of limb, affected limb, organic disorders, heads, old age, etc., which may unfavorably affect his work. _____

SIGNATURE _____ APPROVED _____
Individual making rating

TITLE _____ DATE _____ TITLE _____ DATE _____

FIG. 18. Example of a Well-Constructed Rating Scale. (Courtesy Equitable Gas Company of Pittsburgh, Pa.)

usage to giving too high ratings. It means, to repeat, giving too uniform ratings, whether high, low, or average.

To return to the rating scale in Fig. 18, a mechanical means of reducing the halo tendency (it would probably be impossible to eliminate it entirely) is used. It will be noted that the highest rating is produced for the first trait—quantity of work—by checking the extreme right of the five divisions on the scale, while the second trait has its high end at the left. If all high ratings were listed in the same column, it would be difficult to combat a tendency to check right on down the column in which one has started. One can still, no matter how the scale is set up, succumb to the halo tendency, but at least this reversal of the ends of the scale minimizes it, by making it relatively laborious to give uniform ratings.

The only material criticism of the scale we have presented as a sample is that the middle division is broken down into three parts, permitting three gradations of average, and two parts in the second and fourth columns. This actually turns the scale into one of nine divisions, which we commented previously is too many for accurate judgment. *Actually, the writer is informed that this procedure was* a concession to foremen or other raters who claimed that certain workers could not be correctly rated as just average, yet they were not willing to rate them as far away from the central tendency as one whole division. If this makes the raters any happier, the industrial-relations department in preparing summaries of ratings can always combine into one group ratings in the three divisions of the central portion of the scale; so no one has his feelings hurt and the scale is handled as is desired.

By comparison we show in Fig. 19 a scale for recording interview impressions of the applicant. This is well worked out, although the present writer would suggest that it appears rather susceptible to the halo tendency, is divided into ten rather than the recommended five parts, and has its intermediate ratings scattered about various portions of the line.

VI. Sources of Error in Rating

The interview and its subsequent evaluation have come in for a good deal of abuse. A few writers are highly skeptical about the reliability of such ratings, and hence as to the practical value of

Rating Scale for Recording Interview with Applicant

Applicant's Name _____ Date _____

College or University _____

After a careful appraisal of the applicant you have just interviewed consider each of the points listed below. Place a check mark (✓) on the line above the comment which in your opinion best describes the applicant. Rate each applicant immediately after the interview. Do not check those items on which you have not had the opportunity to formulate an opinion.

(1) Consider his judgment. Does he appreciate the relative value of important and unimportant material? Is he diplomatic in what he says and does?

Seems to be inconsiderate in judgment. Spends time on unimportant details	Is somewhat undependable in judgment. Often wastes time on non-essentials. Says wrong thing frequently	Uses good judgment on simple problems but sometimes gets confused on more complex problems	Is level headed. Recognizes important material.	Is resourceful and prompt in judgment. Spends time on important material. Says and does right thing at right time.

(2) Consider the possibilities of his becoming a leader. Has he a past record of successful leadership? Will he inspire confidence and respect?

Has been a follower. Lacks drive and ability to lead	Wants to be a leader but never has been. Lacks ability to inspire confidence and respect	Was leader in minor affairs. Probably will not develop further leadership powers	Has been leader in minor affairs. Will develop. Has knack of inspiring confidence.	Has demonstrated leadership ability. Inspires support and confidence.

(3) Consider his initiative. Does he impress you as having drive and force? Is he a "self-starter"?

Apparently has little initiative. Will need detailed instructions to carry out plans	Will be content to let others go ahead. Has ability but lacks drive	Will keep going at a moderate very level if many one starts him. Needs prodding	Apparently a very resourceful on carrying out other persons ideas.	Is a self-starter. Will attack over and others problems with drive and enthusiasm

(4) Does he appear to be well informed in his major field? Can he talk intelligently about what he has been studying and doing?

Is unable to talk about his field of specialization. Does not display knowledge of his field	Talks glibly about field but does not appear to know very much about it	Somewhat hesitant in talking about his field. Appears to have only average grasp of the material	Does not talk about field easily but gives impression of knowing it well	Talks easily and intelligently about his field. Appears to know it thoroughly

(5) Consider his ability to express himself. Are his statements clear and simple? Does he use good English?

Gets tangled up frequently. Has poor command of English	Is hesitant in expression. Frequently uses poor English	Is somewhat hesitant in expression but uses good English	Has fairly easy command of expression but occasionally makes a grammatical error	Expresses self easily and accurately. Uses good English

(6) Consider his ability to conduct himself appropriately in the interview. Is he receptive? Does he make valuable contributions?

Is too reserved to. Makes no valuable contributions to the interview	Does not react to questions well. Must be prodded into saying anything	Listens fairly well but makes only a few comments pertinent to the interview	Is receptive but makes only average contributions in the interview	Listens carefully and asks intelligent questions. Makes valuable contributions.

(7) How does his appearance impress you? Consider his facial expression, physique, carriage.

Physique and carriage are not impressive. Creates poor effect.	Physique and carriage are satisfactory but have some marked physical shortcomings	Has fair physique and carriage. General appearance is not outstanding	Has good physique and carriage. General effect is fairly good	Is well-built. Carries self well. Creates a favorable lasting impression.

(Over)

FIG. 19. Rating Scale Used by Interviewer for Evaluating College Applicants.

these scales, which in turn means that the interview itself might as well be abolished. They have felt that there are so many uncontrolled factors, such as prejudice, hasty impressions, and uncertainty as to what constitute the important attributes of any particular position, that different judges would vary among themselves as to the merits of any single individual, and even that one rater might give different ratings if he interviewed the same applicant several times. Some of the specific objections and suggested means of overcoming them will be discussed.

A. Disagreement Among Judges

If any procedure is to be used regularly in employment, or for subsequent evaluation, there should be good agreement among the several persons who might be called upon to make the rating. One need not demand as complete objectivity as is found in measures of height, weight, or intelligence, but the scale should be sufficiently standardized that men trained in personnel policies and interviewing techniques, and who know the requirements of the position for which they are interviewing, could come to at least a fair degree of agreement.

It must be pointed out that no two persons see a third individual exactly alike. Furthermore, in actual employment, one interviewer may be a representative of the personnel division, while the other is a production supervisor. The former is interested more in general personality traits and the applicant's fitting into the firm in some position, while the latter is more concerned with technical skill and experience.

B. The Same Judge May Differ from Time to Time

This has been subjected to actual experimental verification, as well as being observed in daily life. While there may be a natural human tendency to shift one's feelings toward another, this can be reduced by careful preparation of the scale, especially in defining the traits to be rated.

C. The Halo Tendency

The halo tendency has already been discussed in detail.

D. Preformed Prejudices May Affect Ratings

If on the basis of letters, past records, or test scores, the applicant appears to deserve a high or a low rating, it is difficult for the interviewer to avoid what is very similar to the halo tendency, in that those data influence his decisions during or following the interview. This was clearly demonstrated in one experiment, where interviewers were provided in advance of the interview with favorable or unfavorable case histories in terms of such traits as reliability, sociability, and emotional stability. There was a strong tendency to give good ratings to those whose case histories were *superior, and vice versa. We would not, however, suggest that the* interview commence without any advance information. The more data the better, but, as with any of the points we are discussing, the interviewer should realize potential sources of unreliability, and do his utmost to combat them.

E. Some Traits Cannot Be Judged in a Short Interview

No single means of evaluating an applicant or an employee can cover all angles. No matter how many different devices we use in an effort to do a thorough job, we will hire some people who later *fail and will reject some who become striking successes with* another company. We have already discussed the principal causes of failure which cannot be estimated at all accurately during employment, those long-time personality traits such as reliability, initiative, persistence, etc. Even reports from previous employers or teachers may not furnish accurate indices, as the applicant is in a different situation and he himself may have changed.

VII. Improving the Accuracy of Rating Devices

There are only two major ways of improving rating scales: (1) to eliminate human fallibility, and (2) to improve the mechanics of the construction of the scale. The second is obviously more feasible than the first. As to the first, thorough instruction of raters and making them aware of the sources of error we have discussed will at least contribute toward their reduction.

That the quality of scale construction can improve accuracy of rating is demonstrated by the following percentages of agreement

on the part of at least three judges in surveys made in three nationally known industries:

In 87 per cent of cases for presupervisory positions in a precision metallic parts factory;
In 93 per cent of ratings on time-study clerks in an electrical equipment factory; and
In 72 per cent of cases of supervisory applicants in a nonferrous-metal organization, there was agreement among individual trait ratings.
And even in cases of disagreement, rarely was it more than one division of the 5-point scale.

A. Experience and Training on the Part of the Interviewer

The more people one has interviewed and rated, the longer he has been associated with a firm and consequently has become better acquainted with the demands of all positions, and the better training he has had before even undertaking his first interview, the more accurately he can handle candidates. The conscientious interviewer will follow up the success of applicants he has passed upon and who have been employed, to see what factors contributed to their success or failure. He can improve through these observations, thereby increasing his percentage in selecting successful employees.

B. Specialization Among Interviewers

Specialization among interviewers may be practiced in a large company, where, for example, one interviewer may interview all applicants for selling clothing, another for household furnishings, etc. Some have women interview all female applicants, and men interviewers confer with male applicants only. Specialization may be temporary; for instance, applicants to sell clothes may be seen only on Monday, and those for household goods on Tuesday. The advantage of each of these three types of specialization is that an interviewer can better make comparisons, since his judgments of a number of applicants for similar positions are closer in point of time than if he had to interview in random order candidates for all positions within the organization. This drawback is obviously

unavoidable in a small company with only a single interviewer, who actually may devote only part time to interviewing, interspersed among other industrial-relations functions, and even in certain production duties.

C. The Interview May Be Partially Standardized

Questions asked, and in some instances standard scores for evaluating answers, have been used to objectify ratings. One example was a civil-service procedure to select liquor-law enforcement agents. Since the work of such an officer consists in highly variable duties, which often cannot be anticipated or planned ahead in detail, he must be able to decide his course of action for himself. A typical problem is presented by the interviewer, and the applicant is to assume that the interviewer is the complaining citizen, who then is questioned for further information of value. In this way his skill in questioning, as well as discrimination and resourcefulness, can be judged. Interviewers are trained to ask questions the same way each time, and to give similar answers to certain questions which are usually asked. For instance, the citizen says that he suspects a certain taxi driver of illegal possession of liquor. Immediate arrest would be a poor solution, since the driver might not have any in his possession at that moment; likewise he might only be a minor accomplice whose arrest would accomplish little.

D. Have More Than One Judge Rate the Applicant

On the theory that each judge is fallible, it has been suggested that two or more interviewers might balance each other out, and the composite therefore should more closely approximate the actual truth. In one study raters up to four did increase reliability, but far from proportionately. Having five or six raters added no further accuracy. However, there is an obvious practical drawback to having several interviewers see each applicant. An expert interviewer's time is valuable, and the additional cost of hiring would be prohibitive. An exception is usually made in the case of applicants for executive or technical positions, where a man may be interviewed by his potential superior, several other top men in the department, and possibly by one or more executives on the level of vice-

presidents. Finally, it must be remembered that most applicants are interviewed both in the personnel office and by their future supervisor, and the two judgments are pooled. Apart from this last angle the most profitable means of improving accuracy of rating is to improve and standardize the interview and the rating blank itself.

E. Rate the Applicant on Carefully Selected and Defined Traits

Instead of an overall snap judgment of good, fair, or poor, the interviewer judges the applicant or the employee in terms of specified traits. Final summarization should be made from only those traits which are essential to success on the job under consideration. Appearance or certain personality traits will not matter much in a laboring man, but are essential in an executive or selling position. It may even be that several scales may be drawn up to cover different groups of occupations, so that final evaluation is more specific than one which must cover positions from messenger boy or janitor to president.

The number of traits to be rated must be considered carefully. Think of the number of employees who will be rated by a supervisor in his semiannual or annual personnel review, and multiply that figure by the number of traits, and you will see how many independent judgments the rater must arrive at. A scale of 20 items for 50 subordinates means 1000 separate ratings. If these must be done in one week, while he tends to his regular duties as well, ratings are likely to be done hurriedly and hence will reflect that much departure from satisfactory reliability. Ideally we might want to list 30 to 50 traits in our scale, but practically we must usually compromise on as few as 8 to 10. This is another reason a trait must be defined carefully, as in reducing the total number we will have to compromise and often combine two or more traits under a single heading. So we must be sure that each judge is thinking of the same thing when he derives a rating. What is dependability? Without a clear definition, one rater might think of regularity of attendance, a second of the accuracy of typing or computing, and a third of promptness in completing assigned tasks. The sample blank displayed in Fig. 18 takes care of this feature very satis-

factorily. Note, for example, dependability, which is defined in terms of its several angles as it applies to that company.

It will be wise before printing a proposed rating form to have it reviewed by several individuals within and outside of the industrial relations group, to see what possible ambiguities they may detect.

F. Several Rating Scales May Be Desirable

Since ratings, especially the periodical rating which encompasses the entire organization, cover all employees from the lowest to the highest, it is apparent that a single scale will not be equally satisfactory for all positions. Strength and safe practices will be of little significance for clerical workers, and personal appearance of little value for manual laborers. If we keep the scale short, for reasons discussed in the last paragraph, every point must count. A firm can readily compose a different form for each of say six principal groups of employees—unskilled and semiskilled, skilled craftsmen, clerical force, sales and other contact personnel, technical and research employees, and supervisors.

G. Deriving a Total Rating

Deriving a total rating has been attempted by such methods as assigning a score of 5 for highest, 4 for superior, 3 for average, and 2 and 1 points for the two below-average levels, and then totaling all ratings. But in a sense this is statistically unjustifiable, as how can one logically average safety and initiative and personal appearance to arrive at a composite, any more than a farmer can quote an "average crop" by averaging pigs, corn, and milk? If we feel, however, that some overall estimate must be made, weighting of the nature described in connection with test batteries ought to be used, to insure that each trait is accorded its relative importance, to avoid weighting a relatively minor trait as importantly as one which is of utmost essentiality on the job.

In addition to trait-by-trait ratings, scales used for periodical evaluations often provide space for the rater to indicate his overall opinion of the employee as being an outstanding performer, of above average merit, roughly average, below average, or of marginal value. He may also be asked to indicate whether the person is in

line for promotion, whether he has improved in general since the last rating period, and whether he has stagnated or even gone down hill.

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CHAPTER XIV

I. INTRODUCTION

Industrial relations covers a broad and comprehensive field. While it is probable that the employment function is preeminent from the standpoint of the contributions psychology can make, we must remind ourselves of the original all-inclusive definition of industrial relations as the human aspect of industrial management. After the applicant is hired and has become an employee we must introduce him to his work, train him, follow him up, evaluate him from time to time, transfer and promote him, maintain satisfactory working conditions, try to keep his morale at a high pitch, attempt to forestall grievances, or if grievances are so serious that he and his fellows strike we attempt to settle the disagreement as quickly and satisfactorily as possible.

It has been aptly said that complete training involves these three H's:

Head
Hands
Heart

Head involves knowledge of the job; the *hands* factor applies to mechanical skills; and *heart* refers to one's becoming oriented to the company and its ways, and is the first step of developing loyalty to the organization. All three are necessary for development of a first-rate employee.

II. Induction

A. Importance

The applicant has gone through the employment process, and a few weeks later we find him working at a good level of efficiency. This appears simple enough, but there are two important transitional stages in between—that of properly introducing the new employee to his work, and that of training him. These stages may last from only a few minutes to a number of weeks.

He is ill at ease, he is only slightly or not at all familiar with the company, he knows almost no one, and is bound to be confused as to what he should do next. In a large plant this is especially true, where even the task of finding one's way about is not easy.

In this situation the personnel division has its opportunity to make a firm friend for the company. Some personal interest and an attempt to sell the company to the new employee will be decidedly repaid in terms of reduced turnover, longer duration of employment, increased satisfaction, and consequent increase in production. It has been found that a large share of resignations occur very shortly after initial employment. This fact again shows the importance of bridging the gap between employment and eventual full working efficiency.

B. Induction Manual

Many companies assist this orientation process by handing the new employee a printed manual giving him an idea about the company, its origins and growth, its size and extent of operations, its products, important company rules including safety regulations, collective bargaining, hours of work, methods of pay, vacations, training and possibilities for promotion, evening classes which may be taken, employee facilities such as parking lots, cafeterias, hospitals and first-aid stations, social and recreational facilities. Certain financial features may also be explained: sickness and accident benefits, insurance, medical assistance to self and family, savings plans, loan organizations, discounts on purchases, vacations with pay, etc.

Several principles should be followed in preparing this manual. It should emphasize human interest throughout, using the first or

second person: "You and Your Job," "Your Foreman," "What Are My Prospects?" "How Am I Getting Along?" It must be easy reading, clearly and simply written without obviously talking down yet readable by the new worker of moderate education, devoid of preaching, and giving hints as to whom to contact for further or more detailed information. A further personal touch may be supplied by a letter of greeting from the president or general manager. Interest is aroused and sustained by profuse illustrations. A map of the principal buildings, gates, etc., will add to its value. It is well to have it prepared in pocket size, so the worker can carry it about, read it during his lunch hour, show it to his friends, and take it home for his family to look over. Securing the good will of a family tends to make a worker that much more of a permanent asset.

C. Becoming Acquainted

A trip through the plant constitutes the best introduction, and this should be arranged as early as feasible, even on the day the new man is hired, or when he first reports for work. This will help the worker spot the major geographical features of the plant, see the scope of operations, and understand the relation of his work to that which precedes and follows it.

It is strongly urged that the new employee be escorted to his department by a representative of the personnel division, or by a member of the department which he is going to join. Either person will provide the personal touch so needed at this time. It is possible that the novice will feel more at home if a fellow worker calls for him, and walks with him to introduce him to the foreman and a few fellow workers. The latter can give a few inside tips, as well as pointing out the gate, time office, pay window, wash rooms, cafeterias, first-aid stations, and the like.

It has been suggested that a check list of items which should be covered in this informal introduction be printed on a card about the size of a playing card to fit in shirt or vest pocket, with the important points outlined to be referred to by the foreman or fellow workers to insure that all desired points are covered. It is easy for an individual to ride his own hobbies and neglect points which others (or even he himself) will consider equally important.

The card should not be used in front of the new employee—this will appear too formal, but can be checked at leisure later. In a smaller company which takes on fewer employees this card may not be necessary, as contact is so close and constant that explanations and questions can be handled as they arise. Points to be covered include pay, incentive plans, payday, insurance, vacations, important conduct and safety rules, training possibilities, medical surveys, grievance procedure, union membership, etc.

Finally the new worker should be properly introduced to the foreman and a few of his immediate fellow workers—and not, as unfortunately happens all too often, be pushed through the door with a call of "Hey, Mike, here's another new guy for you!"

After a brief chat, the supervisor can make arrangements for training the new man. The "boss" himself in some cases may undertake this breaking in, or he may start it and then assign the new employee to a regular trainer or to a fellow employee. With complex tasks where definite training is demanded, one expert worker may have the duty of instructing all new employees, or a separate training department may carry on this function.

D. Sponsor Systems

Sponsor systems are used by many companies. A certain fellow employee is designated to look after the new man for the first few days, to help him with his lunch hour, locker-room facilities, and entrance into and exit from the plant. He may give some pointers about work, tool rooms, major working and safety rules, and local do's and don't's. Finally, this individual will be a friend to whom he can go and ask for information without embarrassment or fear of being misinformed. Some persons seem to delight in practical jokes at the expense of neophytes, but they may hesitate to try them if they know an older employee is taking responsibility for the welfare of the new worker. The new man is not at ease as yet and is more sensitive to practical jokes than is one who is better acquainted, and he may easily form a lasting bad impression of the company and of a few individuals in particular if he has been made the butt of some ill-timed attempts at humor on their part.

5. Follow-up Interview

Another personal touch may be added by an informal interview a few days after employment, perhaps when his formal training course is being finished and he is about to go on his own. This may take place at his working location or by appointment in the personnel office. The purposes are usually better satisfied if this occurs at the place of work. Possibly the interviewer who engaged him may drop by, as if by accident, and chat with him a few minutes on how he finds the work and his associates, whether he is being treated all right, and whether there are any questions he would like to ask. Whether anything concrete comes from this chat, the writer can testify from personal experience that a new worker is reassured by this display of interest and it shows him that he has not been forgotten as soon as employment has been completed.

III. Techniques of Training

In almost any position beyond the most unskilled a new worker needs some instruction as to how to carry on his duties. This may vary all the way from handing him a shovel and telling him to heave coal or sand, to the many years of training necessary to become a surgeon.

The types of instruction as well as the length of it may vary. These may be divided into three principal levels:

1. "Showing how" very briefly; then turning the worker loose on his job.
2. Brief instruction, and, then giving criticisms and additional refinements from time to time.
3. Systematic instruction by a special trainer on the job or in the training division for a certain length of time before permitting him to engage in actual productive work.

To these levels of training for new employees, we may add training for promotion, where workers may enlarge and improve their talents in order to occupy positions of greater skill and responsibility, and consequently earn greater remuneration.

We shall devote the remainder of this section to discussing broad principles of training, which apply to any type of industrial train-

ing, with modifications only in minor detail to cover different levels of work. Actually, these principles are simply the accepted bases for effective teaching, which can be applied to any instructional situation, whether it be industrial or business training, classroom

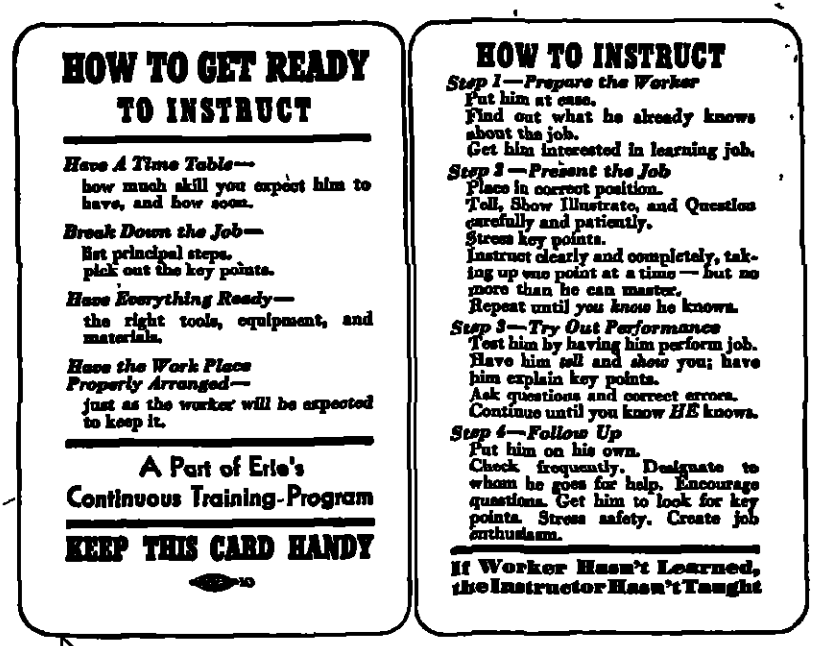

FIG. 20. These brief instructions, printed on two sides of a card the size of a playing card, can be inserted in vest or shirt pocket, and contain the major essentials of a complete training program. In fact, it is our opinion that this is an excellent educational psychology text in itself, and is equally applicable to industrial training, classroom teaching, or athletic coaching. This one is used by the Erie Railroad, and was adapted from the JIT program sponsored by the federal government during World War II. (Courtesy Erie Railroad.)

teaching, athletic coaching, or even for developing desirable habits in one's own children.

Knowing how, or being a good performer oneself, is not necessarily sufficient preparation for being a good instructor. We often hear of a teacher who students will say knows his field thoroughly but can't put across his subject matter; or of the opposite—"Smith is barely out of school himself, but he sure can teach." The best

athlete is not always the best coach, and conversely many of the best coaches were never superior performers in their sports. Industrial training is no exception. The best workman may be a mediocre instructor. Unfortunately actual training in how to teach has until fairly recently been largely confined to practice teaching on the part of those preparing to enter school-teaching. But industry has of late undertaken *job-instruction programs* where members of the industrial-relations department, supervisors, and others who are to conduct training of new or old employees are themselves given training in how to teach.

Many training departments, especially in larger companies, function like a department of education in a university, where the emphasis is not so much on subject matter as on methods of instruction which their pupils will in turn apply to others who desire to learn methods or subject matter in various fields.

4. Analyze the Job

It is obvious that one cannot instruct without a thorough understanding of what he is to teach. The ideal trainer is the all-round worker who has been trained in teaching methods and shows aptitude for imparting his knowledge. But it must be realized that with hundreds of different jobs in any fair-sized organization a corps of a few trainers cannot be expected to have expert familiarity with every one of these. So study of the job must be made, covering its nature, duties, conditions and hazards of work, responsibilities, relation to other jobs, hours of work and pay rates, and promotional opportunities. From these factors is developed the training sequence.

5. Prepare for Training

This applies to the instructor, the learners, and the lesson. The instructor needs to be well informed, confident in the program, and enthusiastic to the point that he feels that without his instruction the new man will never become an A-1 worker. This enthusiasm in turn will convince the learner that the training is not only necessary but to his advantage.

Preparation of the subject matter is perhaps the most crucial step in the whole training program. The program will fail if the

trainer does not know his subject and has not prepared it for adequate and orderly presentation. He must realize that no matter how well he knows his subject matter, he still must prepare his material for careful presentation. A football coach is assumed to know the game from A to Z, yet he plans his fall campaign months in advance. Even the most experienced speakers use outlines for their talks, to insure that they do not omit any material, and to keep their presentations properly ordered and proportioned.

Here is a generalized outline for preparing instruction:

1. Select material—relevant, properly proportioned, and exclude the irrelevant.
2. Proper sequence—in order as the job is to be done. Major points first; save minor and more advanced material for later.
3. Proper length—make as brief as possible, as consistent with explanation adequate to make the meaning clear and easy to retain. Following typed or printed instructions may help keep brevity and eliminate rambling.
4. Accuracy of work must be checked constantly.
5. Individual instruction—each learner does not acquire with identical speed, may need individual attention, and if there is only one machine for training purposes the others can be reading printed material while the instructor trains each in turn.

Whether written instructions are used in the actual training session, it will work for the best to prepare a written set, so the instructor can review from time to time, and so that different instructors will be consistent with each other. If these instructions are not in complete sentences and paragraphs, a very complete outline must be prepared.

Presentation

Putting the lesson across is the most conspicuous part of training, but actually it is the fruit borne by the quality of preparation. This is not to minimize presentation, but to emphasize that inadequate preparation will vitiate the work of an otherwise excellent teacher.

1. *Prepare equipment and surroundings,* especially if training is not conducted in the place of work. The procedure must be systematic and orderly. If one has to look for pencil and paper,

or the machine is in a dimly lit corner of a storeroom, what will the beginner think? As with safety, examples of orderliness and neatness are being established.

2. *Telling the worker* is the first step. He should be told the nature of his work, what place it has in the total process, why it is necessary, where and how it is to be done, and with whom he is to work. It is recommended that this verbal dissertation be as brief as possible, outlining only the major points, and incorporating much of this description with the demonstration.

3. *Demonstration* gives the novice a chance to see how the operation is performed, and as in advertising where it is said "one picture is worth a thousand words" watching a teacher-expert is a better object lesson than a lengthy verbal description. One must adapt this demonstration and accompanying discussion to the level of the learner in terms of education and experience, avoiding technical terms in the case of a beginner and using simple language if he is only moderately educated. Keep things common sense and meaningful.

4. *Speed of presentation* must be held down to a rate which the beginner can follow. The writer is convinced that in both industrial training and classroom teaching one of the commonest errors is trying to present too many ideas in too rapid a fashion. This is especially wasteful and ineffective when the material is technical in nature, or when the learner is a rank beginner. Present *one idea at a time, and not more than two or three major ideas* during each practice session. Be flexible and ready to repeat the explanation in a slightly different way in case the first demonstration does not appear to be understood. Remember that few things of importance are learned in a single trial.

5. *The correct and safe way* must be demonstrated. Be very careful to use the proper technique to a "T." Teach by positive methods, never the wrong way. The "horrible example" may be so vivid that it may be remembered in preference over the correct way. If safety rules require the operator to wear goggles, safety shoes, or a hard hat, the instructor should be doubly careful to set an example of strict conformity.

6. *Have learner demonstrate back* as early in the presentation as possible. He may become bored if you talk and show how too long.

He may be overconfident or may be too bashful or afraid of exposing his ignorance, but if he demonstrates back, by telling or doing, he will expose to himself gaps, hazy points, and errors. Furthermore, he will fix in his memory what he has learned by virtue of doing it himself. This is the same principle seen in recitation of verbal material; one would not think of giving a public speech after merely reading the material once or twice without trying to reproduce it aloud. Don't give the impression that any question is foolish or trivial.

7. *Recognize individual differences.* The learner must be studied carefully, not only in terms of experience and speed of catching on and learning, but in terms of his personality. One is eager and shows great respect for the instructor; another is inclined to be self-satisfied, assumes that the instructor can do him little good, and is resentful of criticism. This person is hard to handle. He will need more enthusiastic selling of the program than is necessary with most employees. On the other hand a little tough discipline may bring him around; such a person usually interprets cajoling as evidence of weakness and such treatment will only fail to increase motivation.

8. *Printed instructions* are often utilized with profit. All instructors will teach alike, and learners can reread directions from time to time to check on their conformance to the proper methods. It has been suggested that it may be best for the instructor to use these as outlines, to be followed, but to give directions orally, *informally, and with accompanying demonstrations.*

7. Continuing the Program

Training cannot be completed in a single session of one hour. Nor can a new employee be kept on a concentrated training program 8 hours a day for as many days as might be calculated to be necessary for attaining productive skill. As in coaching, athletes are never worked at their sport full 8-hour days. Ideally, approximately two 1-hour sessions of training, with the rest of the time spent in work on the job if feasible, or other acclimation to the plant or the department, should achieve better results. Even in

selling, not accompanied by any consequential fatigue, training is confined to 2 to 3 hours a day, with the remaining hours devoted to becoming acquainted with the products on the selling floor.

1. *Present fundamentals first.* The most important and most elementary details should be given in the first session, and later meetings can encompass the remainder, gradually working toward complex and less familiar steps.

2. *Don't hurry* or try to cram material in all at once or too rapidly.

3. *Correct errors early.* If there is alternation between training and practice on the job, points that were not sufficiently fixated during learning can be spotted and remedial training brought to bear.

4. *Encourage and compliment; minimize criticism.* Remember how vague and confused you were when you were in the beginner's place, so give the learner encouragement in a friendly and constructive way. Try to make criticism approach the zero mark. Not to destroy the learner's confidence, a practical device is to shift the blame to oneself—"It looks as if I didn't explain that very well. Let me try to do it more clearly." Call attention to steps not being followed by such comments as "Watch my left hand here," or "See how I time the foot-pedal action in the placing of the assembled part on the trip tray."

5. *Be willing to retrace.* This point was mentioned in connection with the original presentation, and the same arguments hold here, except that we must be even more on the alert to detect items on previous lessons which do not seem to have been assimilated. In repeating instructions tact must be used to avoid giving the beginner the feeling that he appears stupid because he has not caught on instantaneously. His intelligence should not be insulted by repeating the instructions word for word, unless one feels after deliberation that there is something to be gained by so doing. The adaptable teacher can state the argument in several ways, slightly differently each time, but presenting the same principles.

6. *Taper off* gradually, until he is working with no more than the customary supervision.

Follow-up Work

Training is not turned on and off; in actuality it is never finished. Just because the employee is no longer a beginner but a full-fledged worker after the formal program is completed, he cannot be forgotten. His work should be watched at intervals to detect faulty or hazardous habits, to encourage his progress, to suggest more efficient ways of working, and to point out short cuts and minor refinements. A bad habit must be detected and remedied before the departure from correct becomes progressively greater and by becoming fixated is that much more difficult to remove. Tests of speed and accuracy may be administered, but ordinarily careful observation should suffice.

20. Types of Training

A. Training on the Job

Training on the job is the simplest and probably the most common way of learning new working methods. This naturally presupposes work of such elementary nature that it is safe for product, machine or equipment, and worker to be turned loose as soon as he is employed. Only a small amount of showing how is given, and then the worker is allowed to proceed. The supervisor or a fellow worker may give a brief demonstration, and tell the new employee what to do with the finished product and how to get additional materials. Examples of other simple tasks of this nature are sorting packages for delivery according to streets, keeping others supplied *with materials as they begin to run short, filing library cards alphabetically*, or selling in a "5 and 10."

Somewhat more supervision may be given in tasks of slightly greater complexity. For example, a man employed as a general laborer may be assigned to help shingle a roof. With a little observation and brief instructions he can start out and carry on all the straight work. When it comes to finishing at the gable or going around a dormer window, he is given supplemental instructions. The expert gives the new man hints from time to time, watching him and noting anything done wrong or inefficiently. This expert may be the foreman, a skilled worker assigned to break in a particular new man, or a full-time trainer—in simple work usually an

experienced fellow worker. If more lengthy supervised training is necessary it will be best to have the training division take charge of instruction in their own location.

B. Speeded-up Training

Speeded-up training was effected during the war emergency. With time an indispensable factor, and with many new workers who were complete strangers to industry, special training methods had to be devised. This was particularly true with women, who were not only new to industry, but rarely had even the informal mechanical experience their brothers had with bicycles, electrical fixtures, and automobiles. Developing all-round mechanics was out of the question, both because of the time to complete an apprenticeship course and the probability of the majority of workers returning to the home or to office work after the emergency had passed.

So tasks were broken down into parts, and single, simple, part operations were taught. A girl, for example, might spend all day soldering one connection in a radio set or performing one set of tack welds. For long run purposes, of course, such training is inadequate, but it sufficed admirably for the emergency. Employees staying on would have to be treated almost as if they were completely new if they are to be converted to peacetime tasks.

C. Training by Exercise

Training by exercise is a term referring to training a person on tasks exactly similar to those met in the actual work, but not with the same machines or materials, or in the actual work situation. The salesman, to use one example, is given a printed sheet stating that Mrs. Z. Y. Cohen of 528 West 135th Street, New York City, has ordered to be sent, collect, 8 cans of pears at 2 for 35¢. He is to write the order accurately and completely on the right type of sales check, fill in all the requisite data and record it on his tally sheet. A man in training for riveter does riveting work, but uses old materials. It would be dangerous to allow him to rivet a bridge or ship under construction. The theory underlying this training by exercise is that it is better not to let the inexperienced worker do

the real tasks for a while, for fear of injury to himself, damage to a machine, or waste of materials. He is taught under standard conditions, along with others in the same stage of proficiency, with correct methods of working emphasized.

D. Apprentice System

The apprentice system is a combination of learning while working and receiving formal instruction. While the end result is the acquisition of complex and varied types of accomplishment, requiring in some cases several years, the work is so graded in terms of difficulty that even the beginner is usually engaging in profitable labor. If one wishes to become a carpenter, he starts out by doing scaffolding and rough outside work, gradually works up to doing floors and roofs, and finally attacks more complex tasks such as installing windows, staircases, and intricate paneling.

A concrete example of an apprentice training course is shown in the following schedule, in Table 38, used in training tool and diemakers in the Western Electric Company at Hawthorne, Illinois.

TABLE 38. Western Electric Tool and Diemaker Training Program

Assignment	*Shop School Hours*	*Regular Toolmaking Department Hours*
Lathe work	624	624
Milling work	624	624
Grinding	816	—
Heat treating	—	96
Jigs and fixtures	816	768
Tool welding	—	96
Punches and dies	1152	1248
Totals	4032	3456

The whole course, therefore, covers nearly 7500 hours, which is close to 4 years. However, these figures are only approximate, as progression is only on the basis of demonstrated competency. The order of assignments also follows from the simpler to the relatively complex. One will note that grinding is only given in the shop, while two other functions are taught in the regular department. Otherwise there is both practical and school instruction.

E. Salesman Training

In one large department store, salesmen are not given their sales books until after 4 days. During this time they are on the selling floor about two thirds of the day, learning the stock and becoming accustomed to dealing with customers. When they happen to close a sale they turn it over to one of the other clerks to enter it in his book.

They meet in the training department for instruction at two or three designated hours of the day. This instruction deals with three chief phases: certain general facts about the store, technical details about writing saleschecks and handling various types of transactions, and methods in dealing with customers. Major attention is paid to writing the saleschecks. While this may seem to be a routine matter, it is very important and is actually quite complex. Mistakes are costly, and create confusion and delay. The more speedily and automatically one can complete a check the more attention he can pay to waiting on the customer and the more customers he can serve in the course of the day. One who has never done this work may not realize the complexities of saleschecks. In the first place, several different ones are used, depending on whether the customer is taking the package himself or wants it delivered; and whether it is a cash, charge, or collect transaction. Further, certain transactions, like acceptance of personal checks, exchanges, refunds, special orders, and deliveries at a specified hour demand different forms of treatment, and some of these call for authorization on the part of a designated supervisor. The third group of facts, how to deal with customers, includes such topics as form of greeting, what merchandise to bring out, how to present arguments, how to answer objections, how to handle complaints, etc.

After the specified number of hours of training, a test is given to see if the trainee is competent to perform the necessary functions by himself. Some special training may also be given on the floor, as to the goods handled, models, colors, sizes available, etc. These duties will be discussed at somewhat greater length in Chapter XXV, Retail Salesmanship.

Future store executives are specially trained by the W. T. Grant

Stores, well known as a chain concern handling medium-priced merchandise. Since their 466 stores are scattered throughout 38 states, contact with top supervision virtually ceases after placement; hence definite training in the New York headquarters is necessary before assignment is made. A 10-day training course is conducted, with emphasis placed on making the man at home when he is assigned to a store manager, so that he can immediately take over duties as floorwalker, window trimming, answering change calls, etc. The 10-day course covers the history and policies of the company, shoplifting problems, classification of merchandise, windows, stockroom, signs and fixtures, monthly departmental reports, use of list books and practice in ordering, department merchandising; and also talks by top company executives. The Saturday in the middle of this training program is spent in one of their New York stores, acting as floorman, for practical experience. One may feel that this course is short, especially as compared with that given by Macy's, quoted in Table 39, and it is rather brief. But one must also realize that this store has lower priced and less technical merchandise than the other (2).

At the end of the course a test is given, and, if the score is satisfactory, assignment is made to one of the retail stores. Progress is estimated chiefly by ratings of store and district managers, superintendents, and assistant superintendents. Follow-up oral tests are given on stockroom, window display, counter display, merchandising, office work, and organization. For those who fall below 85 per cent on any part of the test, follow-up examinations are given three months later.

F. Developing Versatile Employees

It is desirable for a worker to be able to handle other jobs in addition to his own. The organization is better equipped to take care of emergencies, seasonal fluctuations, and other variations in demand. The employee is more valuable to the firm and to himself, and he becomes eligible for promotion along several lines, so that he may step ahead if any one of several positions becomes vacant. Such training may be accomplished in evening or late-afternoon classes, self-study, or varied experience.

G. Training for Promotion

Many companies make provision not only for the training of workers as they come into the organization, but also for their future development so that they may advance. This training is usually voluntary and may take the form of lectures, demonstrations of products or processes, or moving pictures. Notices are posted, and meetings held after working hours are open to any employee who wishes to attend.

Special courses may also be conducted. Workers on unskilled or semiskilled jobs are given the opportunity to learn more specialized and higher-paid operations, such as electric welding, dynamo repairing, or operating special types of calculating machines. A store may offer courses in fabrics or furs which may lead ambitious salesmen to buyer positions.

Several nationally known industries offer in conjunction with universities "Graduate Work in Industry" programs. Technical and administrative employees, as well as those in supervisory brackets, can take the courses either for the knowledge they acquire or for M.A. and even Ph.D. degrees. Some of the work is taught by experts within the companies, and some by university faculty members. All courses must meet graduate standards in force on the campus, however. Examples of a few courses offered by a steel company are: business English, chemistry, blueprint reading, principles of accounting, personnel methods, metallurgy, steel-production methods, rolling-mill design; and by an electrical manufacturing concern: electronics, speech, scientific management, alternating and direct currents.

H. General Educational Training

General educational training, often through public schools, is made available to employees who have left school at a young age, who wish to acquire foundation courses such as mathematics in order to study engineering, or for foreign-born employees for "Americanization" purposes, to understand the language, government, and customs of their new country. In some plants occasional

time off from work is allowed for such training, on the theory that the plant will be more than repaid in terms of betterment of the working force.

Supervisory Training

It is of great importance to train people to direct and supervise others. Men in such positions as foreman, superintendent, section manager, or buyer, where the duties involve guiding and regulating employees, are of obvious importance in determining the success or failure of the company. Before scientific industrial relations came into its own, a man who had shown himself to be a good worker and who possessed ability to browbeat his men so that they did pretty much as they were told was considered suitable to be a foreman. It is now realized that these qualifications are inadequate; treatment which is too rough increases turnover, fear never raises output more than momentarily, and the desirable spirit of hearty cooperation is lacking. What is needed is men who can handle others in human fashion, yet maintain discipline, and who can provide leadership of a type to bring out the best in each man under their direction.

Supervisory training is very complex, since in contrast to other types we cannot confine our endeavors to increasing skill in one limited sphere. It involves knowledge of one's duties, principles of industrial organization and management, management's policies, and most of all thorough study and understanding of human behavior. Many hints can be given for supervising people. These hints could and have filled whole volumes. A few will be mentioned in Chapter XVII. Suffice it to say at present that rules and policies can never provide the solution for every conceivable situation. Actually, successful supervision must depend to a large extent upon those who are selected to be supervisors. The bulk of their conduct depends on the social qualities they already possess.

This supervisory training can be handled like "Graduate Work in Industry" programs, through joint instruction by staff members and/or university specialists in fields pertaining to industrial management. Courses may be open to those who desire to take them, or management may nominate and invite certain promis-

ing individuals to take the courses. Fees may be absorbed by the company, the worker may be made to feel that he is investing in his own future, or the two may split the cost. Naturally no one is forced against his will to take such programs, nor is there a guarantee that immediately upon completion of the course he will be granted a promotion.

A. *Training in problems of management and supervision* will usually include most of the following items, and possibly others:

1. Supervisory problems.
2. Responsibilities and duties of the supervisor.
3. Industrial organization; function and structure.
4. Selection and placement.
5. Job analysis.
6. Job evaluation.
7. Training methods and techniques.
8. Rating and promotion.
9. Turnover, layoff, and termination.
10. Motivating the worker.
11. Qualities of leadership.
12. Labor relations and morale.
13. Union negotiation.
14. Grievances—forestalling and settling.
15. Safety.
16. Production planning.
17. Economy of production and control of waste.
18. Obligations to employees, customers, stockholders, and public.

B. *Company problems,* of a nature primarily applicable to one's own company, will form a second division of supervisory or executive training. Even an individual who has worked for several years may be surprisingly hazy about major company policies, programs, departments other than his own, executives other than those with whom his work has close connection, other company plants beyond that in which he works, competitors, and problems peculiar to the industry. Special emphasis, then, will be laid upon these broad problems:

1. Company organization, with detailed charts such as shown on page 215. Major company subdivisions, with the various executives and their authorities.
2. Major company policies and procedures.
3. Production methods. Regardless of whether he is in a producing department or a staff department (industrial relations, sales, finance) he cannot do the most intelligent work unless he knows the fundamental problems and methods of production of the product.
4. Products: types, sales methods, distribution problems, customers.

C. *Supervisory conferences* on special topics are comparable to the follow-up training work recommended for skilled workers. Some of the major purposes of these are:

1. Emergency situations, calling for executive conferences to show how to handle the problems arising.
2. To announce and discuss the implications of important changes in organization, methods, products, production methods.
3. Training in how to train others, or to put across special programs. Restoring to work returning servicemen has been a huge and complex program, involving company policy, governmental regulation, and human aspects. Consistent programs must be worked out, and are introduced first to top supervisors in a series of conferences, following which they each meet their own subordinates, and these in turn apply the program. ~~This is in line with the "fanning out" system discussed on page 313.~~
4. Training an understudy, so that one's work can be carried on if one is on vacation, ill, or promoted.
5. Introduction of special topics.

D. *The Flying Squadron* is used in training executives and potential top-ranking persons toward thorough familiarity with all essentials of company operation. This is taken up in the next section.

VI. Flying Squadron

The term Flying Squadron refers to a group of employees who do not have permanently fixed assignments, but who are shifted from one department to another. It has two principal purposes: (1) to smooth out fluctuations in demand, and (2) to train potential executives in various phases of the business.

A. Smoothing Fluctuations

Variations in business are usually greater in a store than in a factory, since in the latter seasonal fluctuations can be anticipated and handled, but no one can control heavy buying on Saturdays, before a holiday, or at the beginning of certain seasons. Likewise, it is easier for a person to sell a different line of goods than to run an unfamiliar machine.

This force of extra salesmen may be either full-time or part-time workers. In the latter case boys and girls going to high school or college may come in for Saturdays or holiday season, and be assigned to whatever locations need extra temporary help. Such arrangement is eminently satisfactory to both parties. The students earn extra money the days they are free, and the company will have an enlarged force at peak times without necessity of keeping them the rest of the week. These students constitute an excellent source of executive material after they have completed education. From their standpoint they have the further advantage we stressed so heavily in Chapter II—they have had a *vocational tryout* which will give them that much advantage in eventually arriving at their vocational decision.

B. Executive Training

The more that men and women who hope to rise to executive positions know about the duties of employees they may supervise, the better they can manage others and handle matters of responsibility. In talking to executives of large stores and industries the writer has always been impressed with the mass of information, down to what would appear to be exceedingly minute details, possessed by these men whom one might think would have all they could do to make major policy decisions.

So it has become a common practice to have this group actually work at as many different tasks within the store or plant as possible, spending time on each job in accordance with its complexity and probable relationship with later executive function. Actually doing the work enables the individual to learn much more about the real problems, tasks, and difficulties than lectures or inspection tours could provide. Further, he is productive at the same time he is learning. So his salary is not a dead loss, although it is usually somewhat higher than the work he is doing would otherwise warrant. Another benefit of shifting about is that special abilities and interests may appear, which may warrant later permanent placement in one particular department or in one phase of work.

It is fully recognized that the work done by these individuals may not be fully efficient, since they are only a few days on each job, but since their abilities are above average they usually catch on rapidly. And many tasks are related; for example, they may sell in various departments over the course of several weeks. After they have learned something about salesmanship and have acquired confidence, they should be able to step into any sales department and do a satisfactory job.

A sample schedule of a Flying Squadron used for executive training by R. H. Macy & Company is shown in Table 39. Thus the candidate for future executive position has made contact with nearly all important divisions of the store: sales, supervision, stock, merchandising, working in a smaller store where a better perspective of the whole can be obtained, and finally under special assignments opportunity to study certain special phases of work for which he appears to have special interests and aptitudes. The total time is about 7 months.

Many of the general duties in Table 39 are in actual practice further subdivided. The time spent in selling or in acting as section manager is not entirely devoted to a single department, but a person is shifted about from one department to another in accordance with trends in business and with the plans of the training division as they desire to have the individual gain close contact with different phases of the organization.

After the course has been completed, the placement of the individual will depend on ratings and on his own preferences. If he

TABLE 39. *Department-Store Executive-Training Program*

Position	*Duration*
Executive orientation	5 hours
Service shopping	1 week
Tour of store	1 day
Selling-systems course	
Selling assignment I Selling assignment II	5 weeks
Operating and service course	
Basic supervisory training (15 hours in class) Operating supervisor	3 weeks
Service supervisor	3 weeks
Comparison	1 week
Receiving	1 week
Observation	1 week
Sales promotion	1 day
Adjustment-service department	1 day
Personnel representative	1 day
Bureau of standards	2 hours
Training-squad meeting	2 hours
Long Island warehouse	½ day
Section-head course	11 hours
Section head I	6 weeks
Controller's office	1 week
Parkchester (branch store)	1 week
Section head II	4 weeks
Special individual assignment	
Read history of store	
(Training-squad conference also meets every Thursday 3-5, conducted by a key executive)	

does not seem as yet quite sufficiently developed for a responsible position, he may be given further training, or he may be assigned on a semipermanent basis to a slightly lower position. He may be made a section manager, head of stock, or advertising assistant until he has learned enough and matured sufficiently so that it is suitable to let him become an assistant superintendent or buyer. During the course, also, special abilities may be disclosed which suggest his placement in one particular department, such as advertising, buying, or auditing.

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The writer also has profited greatly from discussions on training programs with representatives of various industries, especially R. H. Macy & Company and the Western Electric Company; and from manuals prepared by Carnegie Illinois, Westinghouse, and Industrial Rayon; as well as supervisory training materials prepared by The Pennsylvania State College Extension Services, of which the writer was formerly a member.

CHAPTER XV

PROMOTION AND TURNOVER

It is not ordinarily expected that every worker will remain in the same position during his entire tenure of employment within a company. Two major changes may occur: (1) he may be promoted; or (2) he may be transferred to another position for which he may be better fitted or for which he has greater interest.

I. Promotion

Usually when one accepts a position he is thinking of ultimate promotion as well as success in the position for which he is applying. Promotion is ordinarily thought of as involving an increase in compensation, but it may also include higher rank, greater responsibility, better working conditions, and other improvements in working and personal status. Walters (*4*, p. 97) lists eight types of promotion (see Table 40).

Table 40. Forms of Promotion

1. Advancement in wages or salary.
2. Increased responsibility, authority, position, or title.
3. Decreased working time, such as hours per day, days per week, or increased vacation.
4. Transfer of employment to better location or department.
5. Betterment of working and living conditions.
6. Provision of opportunities for greater training, experience, and outlook.
7. Increase in security of position and benefits offered.
8. Extension of length of service because of outstanding work.

Judicious use may be made of each of these methods in turn. Instead of the usual practice of accompanying a raise in salary with a higher title, a private office, increased vacation privileges, and other executive prerogatives, granting these one or two at a time will make progress seem more consistent and rapid. Promotion is a matter of pride and personal satisfaction as well as of pure economic return. Especially in times of slack business, where a financial increase may be impossible, a "dry raise" in terms of authority and privileges will give the individual recognition and encouragement.

Use of this technique should depend on study of the individual and his ambitions. Some people are extraordinarily financially minded and may be insulted by a promotion unaccompanied by cash. Others derive much more satisfaction from a private office than from a $25-a-month raise.

No one will deny that promotions should be handled as systematically and in as orderly a fashion as is employment—perhaps even more so, because a promotional decision affects a whole department while hiring primarily concerns only the individual. That the vacancy should be awarded to the appropriate individual is obvious. Even such important considerations as length of service and performance on the present job should be given only as much weight as can be demonstrated to be pertinent for such promotion. Seniority and value to the firm may be mildly correlated, but most union contracts provide seniority shall determine promotion only when skill and physical fitness are equal. One with a great deal of seniority may actually be too old to undertake a new position. Or one may have reached his ultimate limits where he is. Friendship with the boss could only be defended from the loyalty angle, and this basis for promotion may cost the loyalty of 99 other workers.

An especially important problem is whether to make a policy of promoting from within the organization on all possible occasions, most of the time, or merely some of the time. It is very discouraging for a man to work hard and faithfully over a period of years, in expectation of ultimate promotion, and then find management bringing in a man from the outside over his head when a vacancy

does arise. The writer has seen organizations whose junior executives definitely had low morale, and one of the most important contributing factors was evidenced by this often heard comment: "You'll never get ahead here; any time a good job opens up they bring in a new man from outside." From management's side it is only fair to point out that not always is there a man in the organization who is qualified. Occasionally two men are so evenly qualified that selection of one is bound to be unfair to the other. Of greatest importance is the desire to bring in new blood, with its new ideas and new enthusiasms. It is our suggestion that a company will profit by a compromise, and bring in an outsider a third or a quarter of the time, but in the majority of instances attempt to promote from within. Naturally no recommended figure can be absolute, as individual cases depend on material available for promotion, conditions within the department, and other human factors.

Like initial employment, promotion should be a process of fitting the most appropriate man to the position. To match the man and the work we use primarily two instruments previously discussed: the position description and the periodical rating. The first will tell what the duties of the position are and what sort of person is needed to fill it, and the second will summarize the characteristics of those individuals who are logical candidates. The points to consider in determining promotion are about the same as those for employment, although slightly different interpretations and emphases will be placed on some of them.

1. *Experience:* Regardless of a man's potentialities, most positions of responsibility demand a certain amount of experience in related or subsidiary positions. Promotion from within has the feature of providing an individual who is familiar with the company, and usually with most of the duties of the position immediately ahead of him.

2. *Age,* apart from experience: Just as the age of 21 has been set arbitrarily as minimum for voting privileges, there are certain ages below which an individual may not be mature enough to make important decisions.

3. *Training:* The person's record must be inspected to see whether he has undergone whatever general or technical training may be required. Practical experience may often be substituted for formal training.

4. *Intelligence* is in some ways more important in determining promotion than in original employment. A man may be totally incapable of doing work in a higher position, even though he was highly successful in work of medium difficulty. Quality of work in the present position should not necessarily be interpreted as a perfect predicter of equal merit in a more complex one.

5. *Personality traits* will differ according to the position, so no generalization is possible beyond the statement that the higher the position the more strict the demands will be. Certain traits will be especially scrutinized, such as willingness to assume responsibility and leadership, ability to manage and get along with people, sound judgment, initiative, originality and imagination, and meticulousness and extreme accuracy. It will be recalled that in discussing introversion-extroversion we suggested that the former is more suited for technical lines while the extrovert is better able to engage in lines involving supervision and other social contacts.

6. *Performance on the present job* very obviously must have been of high quality before an individual is considered for promotion; we are only mentioning it here to incorporate it into our list of traits to be considered. Unless one is outstanding in his present work we have no ground for assuming that he would do better in a still more responsible position.

Conditions for Promotion

Possibly we are approaching this problem in reverse order, but it should be pointed out that before a promotional offer can be made, these four conditions must pertain:

1. A vacancy must exist.
2. The company must desire to have that work done.
3. The company must be able to afford to pay the requisite wage or salary.
4. A man within or without the company must be found who is capable of handling the job.

II. Transfer

Transfer, consisting in a shift from one position to another, but on the same general level, is often equivalent to a promotion, in that the employee is moved to work more to his liking, in better surroundings or with better working conditions, or to a better place of residence. Being recalled from the branch agency in Podunk and assigned to the same position in a desirable city is a form of promotion; likewise, being sent "to the sticks" or to a dirty factory town may be considered in a sense demotion and may be accepted only with extra pay as compensation.

There are several questions which arise in connection with transfer: (1) Why shift a worker at all if he is doing all right in his present position and is not receiving an actual promotion? (2) Should he be transferred at his own request, if he thinks he will be more interested or more able in another type of work? (3) Should he be transferred because he and his boss disagree? (4) Should regular transfer be practiced, to give variety or to make the worker more versatile?

In some cases transfer may be justified; in others it should not be granted without careful investigation. We cannot have random shifting about from one job to another, or the whole working force will soon be in a state of flux.

A. When Transfer Is Justified

In many cases transfer is perfectly justifiable. By doing it judiciously we may save possible turnover and raise efficiency. A man who is already within the organization can learn a new job more easily than an outsider.

1. *To smooth out fluctuations in production or seasonal demands:* This shifting is not only necessary, if layoff is to be avoided, but it makes the man more versatile; of more all-round value to his department for similar situations arising subsequently, and it may also contribute toward his becoming promotional material.

2. *When a vacancy opens up for which the employee has greater capacity:* This ties in with the earlier suggestion that a promising applicant whose primary interest was in a position not available

at the moment might temporarily be assigned elsewhere, for later transfer, rather than losing him from the firm.

3. *Flying squadron; executive training:* In these cases transfer is anticipated and deliberate, so there can be no question about its advisability.

4. *When employee has developed new capacity,* through his own study or training offered by the company: This is in a sense promotion, as it usually leads toward a higher-paying position, even if the level and title of the position to which he is transferred may be substantially the same.

5. *When interests of the employee genuinely lie along new lines:* Interests may genuinely shift, and one may waken to a realization that he has an interest he never realized. For instance, he may be temporarily assigned in an emergency to another department, and find the work very much to his taste. So long as it does not appear to be a whim that may be repeated every so often, transfer will be justified. But the genuineness of the claimed interest must be investigated, or the personnel office will be swamped with applicants desiring distant and greener pastures.

6. *To remove friction, if it does not seem likely to be repeated:* We have all seen two perfectly worthy individuals who do not get along with each other, yet who are in no sense of the word troublemakers. If management is convinced that this is really the case, transferring one of the men will restore harmony, and both will be saved for the organization.

7. *Health* reasons, including accidents, may cause the older or injured employee to seek lighter work such as being timekeeper or watchman instead of engaging in production. This is justified from the standpoint of society as well as the individual. It may necessitate a demotion in salary if the firm cannot afford to retain the person at his former rate of pay in this work of lesser rated value.

B. When Transfer Is Not Justified

Transfer has often been used as a temporizing and weak solution of an embarrassing situation, but such handling only shifts and delays ultimate solution.

1. *To satisfy whims on the part of the employee:* As discussed under Point 5 above, such transfer is justified only if interests are determined to be genuine, and not a passing whim.

2. *To rid the supervisor of an embarrassing situation:* In cases of conflict the supervisor usually wins, regardless of the merits of the case, and the worker is made the scapegoat. But we should be careful about such a case, as it is likely to be repeated, and unfair handling will upset morale of the whole department.

3. *To practice regular transfer:* It has been suggested that in monotonous tasks a regular reassignment, say every three months, will relieve monotony and restore enthusiasm. However, surveys have shown that the majority of employees prefer to remain at a constant task rather than to shift around. The intelligence factor is undoubtedly operative here; the higher the capacity of the individual the less he likes to do repetitive work and the more he profits from engaging in a variety of activities.

To sum up, it is strongly recommended that a thorough investigation of the merits of any case be made before transfer is granted. We must be sure that transfer will be best from the standpoint of the individual, the organization, and both departments concerned. In many cases it will be justifiable, but one should be hesitant and careful before acceding to the request.

III. Resignations and Discharges

It is not to be expected that the personnel of any organization will remain intact forever. Even beyond the bare minimum of retirement and death, there are bound to be resignations, discharges, and additions to the force. It is very important that the company study the reasons employees leave, especially when such departure is voluntary. Just because they are severing connections with the company is no reason for closing out their records without inquiry as to cause.

Many companies have instituted an *exit interview,* and require all persons who are leaving to go through it. Since it might be difficult to get some of them to go around to the personnel office for this specific reason, it may be disguised by having the visit ostensibly for the purpose of O.K.'ing the final pay slip, turning in identification badges, locker keys, and tools, and similar formali-

ties. While these technicalities are being disposed of, the interviewer can informally draw out the departing employee and find the real reason for his leaving.

Such a survey is far from pure research. It can and should have great practical value. Among the benefits to be derived are:

1. The employee may be only disgruntled, and might be persuaded to remain.

2. Unfair supervision, such as a mean or sarcastic foreman, can be detected. If the resigning employee cannot be retained, possible future resignations may be prevented.

3. Unnecessarily unpleasant working conditions are often detected and remedied. Some employees quit their jobs without protesting first, and they may be retained if measures are taken to improve conditions.

4. Policies and practices which place the company in a poor competitive position are discovered. In one company a large number of delivery department resignations were occurring, and it was discovered that other stores were paying $2 per week more. Added duties may be the contributing factor, such as a salesman having to dress windows or act as his own janitor or stock clerk after working hours. Another cause is refusal to grant employees discounts on purchases.

5. The exit interview can be used to retain friendship for the company. An employee may be leaving because of marriage, family moving, or a preferred type of job elsewhere with which the company cannot compete. A friendly farewell conversation will at least convey the "glad-to-have-known-you" attitude and may have future value in customer relationships, referral of friends as potential employees, and publicity among other friends.

6. Poor employment practices may be detected. Workers who are not doing well may quit, even though there has been no threat of discharge. Their performances may be checked against their employment records, to see whether standards might have been too low, or whether emphasis was laid upon the wrong traits.

Causes of resignation are tabulated as accurately as can be ascertained in this friendly interview, and are examined to see if a number of cases name similar sources of dissatisfaction. Single instances of grievance may represent idiosyncrasies, but when a num-

ber of employees leave, or threaten to leave, all because of the same item of the foreman's conduct, dissatisfaction over pay or one aspect of working conditions, or handling of overtime or vacations, management must take serious consideration and attempt to remedy conditions.

Some investigators have been skeptical as to the accuracy of findings obtained in such a survey. Even granted these workers are leaving the company's employ, they may be afraid their final pay may be held up if they give as reason something derogatory to the company, they may gloss over the reason not to put anyone in the wrong, or the reason they give may be only the last straw in a long train of unsatisfactory conditions. Accordingly investigators at Lockheed Aircraft (2) followed up as many resigned employees two to four weeks after leaving as could be traced. They interviewed 421 former employees, men and women. Three fourths of the men left for occupational reasons, but three fourths of the women had quit because of personal reasons. Younger men were principally dissatisfied because of having been placed on an undesired job or because of conditions of work. Those between 24 and 37 stated wage dissatisfaction as their major reason for quitting, while older persons named personal causes, including health. An interesting factor appeared when pay factors were compared. Those who had gained when they came to Lockheed stayed on the job more than twice as long (17 months) as those who had taken a cut (7 months), and those who had just about broken even remained an average of 9 months.

Discharges are important to investigate, as well as voluntary resignations. In most cases it is safe to say that a person who has to be separated should never have been employed in the first place, and careful study of causes of failure will suggest improved methods of selection. Thus we will find out how many employees proved unsatisfactory due to poor ability, insufficient training, personality or conduct failings, health or physical shortcomings, failure to adjust to company rules and methods, etc. Those involving selection can be handled fairly readily. Most of the latter can also be taken care of during employment and induction—that is, clear understanding can be effected as to what the company expects, so

that there will be no danger later of engendering the feeling that new rules are being invented and laid down capriciously.

IV. Costs of Turnover

We have constantly emphasized as a major goal in the selection, training, and treatment of employees the effort to retain them within our organization as long as possible. Ideally, we would like to have no further turnover than occasioned by retirement or death. Let us also concede that a girl might resign after marriage. Nor would we flatter ourselves to the extent of expecting a married woman to find our company so delightful that she would refuse to follow her husband if he obtained an excellent position in another city. Also, some employees will be offered positions involving work more to their liking than we can provide, or at salaries which our job evaluation scale cannot match. But ignoring these minor exceptions, the general principle holds.

Considered in a broad sense, turnover must include promotion and transfer, since, whatever the reason, an individual has left a job and a replacement must be secured and trained. If a top executive retires, half a dozen promotions may ensue, and each of these individuals must learn his new position, during which time they all are below maximum effectiveness. This latter type of turnover is unavoidable, of course, but it is nevertheless costly and disruptive.

Estimates of the cost of turnover vary greatly (*1*). It is safe to say that even a casual laborer will cost $50 to replace, and a top executive's resignation or retirement might cause direct and indirect losses totaling several thousand dollars. In estimating such a cost, these items must be considered:

Cost of employing replacement.
Cost of training replacement.
Lost production before new employee attains desired skill, total or partial.
Possible spoiled materials and damaged equipment.
Possible accident costs.
Unfavorable repercussions on the resigning employee, on his achievement record and his personality.
Losses to others, in promotion or transfer to help fill the vacancy.

Turnover may be studied, not only by the case-study method we have outlined, but statistically to see where the greatest extents of instability arise. The percentage is commonly quoted by the month, or by the year if the department enjoys fairly good stability, by means of the following simple formula:

$$\text{Per Cent of Turnover} = \frac{\text{Number of Separations}}{\text{Average Number on Payroll}}$$

Thus, a department employing an average of 100 men during the time period under consideration, and which has 10 resignations and discharges, would be said to have a 10 per cent rate of turnover. The number of separations may or may not include those who have left due to transfer or promotion, depending on management's preference. However, comparisons between departments or between one company and another demand consistent methods of calculating the ratios. It must be confessed that such consistency, however admirable, is in actuality far from achieved, making comparison between companies highly difficult.

No goal, such as the optimal temperature of one's house during the winter, can be recommended. Salesmen in stores and relatively low-skilled workers have high turnover rates, but the cost of replacement is relatively low. It is much more a matter of worry for one to find turnover as high as 2 per cent a month among skilled craftsmen than one of 20 per cent a month among department-store salesmen (a figure actually found in New York City). Comparisons must be made among related departments and between similar businesses and industries, as well as between one time period and another within the divisions of a single organization. Increasing or excessive rates can be approached in the same general ways as we discussed in connection with the exit interview.

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CHAPTER XVI

LABOR RELATIONS

What Makes Sammy Run was the title of a popular novel a while back. Each of us at times asks what makes a certain person tick, or how we can get someone or some group to do as we desire.

Industrial relations as a whole is charged with handling the human problems of business and industry, and the labor-relations division within an industrial-relations department must handle the most human problems of all. It has to deal with human motivation, ambitions and desires, leadership and supervision, morale, troubles in the form of grievances and strikes, and labor-management relationships in general.

As one writer puts it,

> Securing employees today is not nearly so acute a problem as is enlisting their cooperation and loyalty, once they have become members of the organization. The problem of motivation is concerned, not with the task of getting workers to do assigned jobs, but with the task of enlisting their cooperation and loyalty when they have already become identified with the organization (*9*, p. 249).

I. Motives of Employees

The human race likes to flatter itself as behaving rationally, and contrasts itself with animals, who it says are motivated by hunger, sex, and other basic motives. But more and more the psychologists, as well as leaders of both labor and management, realize the importance of the nonrational, the emotional, and the motivational in human conduct.

What are the strongest human motives? Sex? Hunger? Family?

Love? Financial reward? Pride of work? Desire to surpass others? Social recognition? All of these are strong, and we would probably be out of order in trying to line them up in order of relative strength. The situation—work, home, family, social—will usually determine which is strongest, and furthermore each person has different desires and ambitions.

For example, to say that most strikes or threatened strikes are over pay issues, proving conclusively that financial intake is the most important motive, is too superficial an analysis. Pay is granted to be important—very important—to each one of us. But after all pay is only a means to an end. Perhaps your valuation is in terms of the vacation trip a good income might provide you, a second person would build an extra room on his house, and a third would take out additional insurance. The motives are really recreation, family, and security, respectively, and not fundamentally economic. The old idea of "raise their pay and they will be satisfied" is also superficial; the truth probably is that workers will endure unpleasant physical or social conditions of work for more money, whereas they would quit if the lesser rate of pay continues.

Granting, then, that worker motivation is complex and is tied up with the job rather than with abstract motives, we present in Table 41 a list of six main classes of motives, with principal ways of satisfying each.

What's on the Worker's Mind is the title of a well-known book in the field of labor relations and can aptly serve as the theme for our ensuing discussion. Whiting Williams, it is said, accepted a bet on the part of a friend that he could not work in a mill for a period of time without being detected as an educated individual; so he got himself a second-hand suit, a laborer's haircut, and applied for a job at a factory gate. He "served his time" as a bona-fide laborer without detection, and in the course of his work he found so many disparities between management's assumptions of the employee's motives and those he observed that he wrote his experiences in book form. Following this, one company after another sought his services to make first-hand studies of their organizations, not as a spy as might be accused, but to ferret out the true causes of low morale. Contrast his method with the usual

TABLE 41. Principal Employee Motives

1. Financial
   A. Satisfactory pay, commensurate with work done
   B. Decent living standards
   C. Incentive earnings—reward according to individual production record
   D. Profit sharing
   E. Security (see 3)
2. Ego
   A. Pride in material resources
   B. Pride of accomplishment
   C. Desire for recognition of personal merit
   D. Recognition of importance of job
   E. Voice in management—work schedule, methods of doing own work, production standards, employee suggestions
   F. Dislike of unduly strict supervision
   G. Dislike of inflexible regulations
   H. Dislike of suspicion—constant checking and inspecting
   I. Opportunity for advancement
3. Security
   A. Regular work
   B. Job-tenure, fear of capricious discharge
   C. Seniority—advancement, retention of job
   D. Union membership—individual security through group action
   E. Security after retirement
4. Social status
   A. Prestige of job in public eye
   B. Opportunities for family
   C. Skilled versus unskilled jobs
   D. White-collar jobs as preferable
   E. Absence of paternalism on part of management
5. Family
   A. Adequate and steady material resources
   B. Respectable living, schooling
6. Satisfactory working conditions
   A. Comfort at work
   B. Freedom from accident hazards
   C. Hours of work
   D. Clean cafeteria, toilet, locker room
   E. Supervision

brass-hat tour of inspection, with careful preparation following advance notice, cleaning up, everything running smoothly, and everything as artificial as possible. This latter method produces information of exactly zero value.

Williams sums up his findings from years of experience in the following five points, taken from *Mainsprings of Men* (*11*, p. 3-4):

> First. The astonishing consequences which follow in the lives of millions from the restrictions of their material and their dollars-and-cents conditions—consequences physiological, intellectual, emotional, and spiritual.
>
> Second. The surprising vastness of the gap which everywhere among the workers separates the holder of a "swell" job from the holder of a "bum" one, and most of all divides the possessor of ANY job at all from the luckless vagrant who possesses none and knows not where to find one.
>
> Third. The amazing ignorance, on the part of employer and employee, of each other's deeper purposes and desires—the incredible ease and certainty with which each of these groups proceeds to justify to itself its viewpoint regarding the other. So far from caring to indulge in mutual study, each appears so often to feel that it already knows too much about the other!
>
> Fourth. The unbelievable importance of the worker's feelings and experiences rather than his logic or reason as a factor in all his viewpoints and attitudes.
>
> Fifth. The unity of life and labor—the complete impossibility of walling off the factory from the home, the worker from the citizen, of dividing the hankerings of a man's working hours off from those of his hours of leisure.

~~The reader~~ You are advised to read the above quotation several times and let its full significance sink in. These fundamental observations and their ramifications give as clear and complete a picture of workers' motivations as can be found.

One constantly runs across the fact of the lack of understanding between labor and capital. The worker feels that management is out to exploit him without giving proportional return, that he will be fired the minute work runs short without consideration for his needs or feelings, that piece rates will be reduced if production goes up because of increased efficiency, and that promotion is only given to those who have a special drag. Employers seem at times to

assume that workers are people of an entirely different class and that their hopes and desires are small and not much worth considering, and that unions exist only for the purpose of gaining ends which the workers do not deserve.

Just what does the worker want? The most dominant motives seem to be: to preserve self-respect, to be able to express himself with a high degree of accomplishment, and to be assured of the opportunity to work full time.

Pay has a surprisingly low rank in the scale of values. Williams soon found out the fallacy of the common assumption that all the worker is interested in is money, and that he will put up with any sort of treatment or conditions if paid enough. Money, of course, is very essential, but other things are far more important than slight differences in wages alone.

"Charley, how'd you like to join the millwright gang?" the foreman called to me. He appeared to think he was offering a distinguished honor —in spite of his explanation that it paid only two cents an hour more. The change was accepted with indifference: surely so slight an increase in pay could not mean much of a promotion. Half an hour sufficed to prove my error. As I came by my former companions, carrying oil-can and wrench, I made a veritable sensation! Every one of these old friends leaned upon his shovel and wiped the sweat and dirt out of his eyes while he exclaimed:

"Hey, Boodie! W'ere you catch-em job?—Meelwright gang? Oil-can and wrench! No more blank-blank shovel! My Ga-wd!"

From that moment it was possible to talk familiarly with the first and second helpers, those experts who peer through their colored spectacles into the changing conditions of the furnace's "bath" of "hot metal" up to the instant of the "tapping." For three weeks I had puzzled why these men would have nothing to do with me. Now we were suddenly become pals! But this was not all. My elevation brought honor not only inside but outside the plant. Without doubt, if my wife had lived nearby, she would have received the congratulations of the wives of the unskilled laborers, "Your man he catch-em fine job!" And not one of them but would have observed closely, the next day, to see whether she continued to speak to them!

All this amazing change of status, both as a worker and as a citizen, on a difference of only two cents an hour! (*11*)

In back of all this we see human pride and self-respect assert themselves. One likes to feel that he is indispensable, that he has power, that he does big things. This is why men are eager to work in dramatic types of activity such as manipulating a steam shovel, guiding a streamliner or an ocean liner, working on top of girders on a skyscraper, building a large dam, etc. Each member of the crew feels that things cannot go on without him, that his part is essential to the smooth and safe working of the whole. Like a machine, all parts of an industrial organization must run in smooth coordination to achieve maximum efficiency. If each worker can be made to feel the importance of his contribution, so much the better; work with pride is better work.

Social recognition is one of the intangible compensations for many jobs. We saw that a raise of a couple of cents an hour in Whiting Williams' case was accompanied by a vast rise in social acceptance. White-collar positions are more in demand than laboring jobs which pay much more, and actually that is why they pay less—underbidding has driven the price down for clean, clerical work done in a nice office. The writer has had as secretary a college graduate with 5 years' stenographic experience at $130 a month, whereas an illiterate unskilled laborer could make $175 a month working in a mill of the same company. As one man said, "When I go out into the street I might be president of the company, but if I have on overalls it is obvious I'm not." Similarly, "We hardly think of ourselves as factory girls at all," said a young lady in an attractive hardware work-room. A newly appointed machinist was chided by a veteran for going down the street with his face unnecessarily grimy—that suggested common labor. But if one cannot avoid getting dirty, the dirtier the better, to show that one has worked hard at a tough task. Here is the remark of an open-hearth laborer to a slender youth who wanted to work in the steel mill, "You work in a steel plant! Ha! Run along, sonny, you ain't got guts enough for this job!" Certain professions are much higher in the prestige scale than in the pay scale: teaching, ministry, social work.

A policeman observed that the addition of traffic regulation to his duties made the difference between being a little ashamed of his job and being proud to be known as a member of his pro-

fession. Nursing was regarded as a low class of work fifty years ago, when women convicted of minor crimes were given a choice of 10 days in jail or equal time helping in a hospital—"10-day women." A laborer said he was perfectly satisfied with his job, except that on being asked what his job was, he so often got as reply the single word, "Oh," with a raised eyebrow. A salesman is said to have remarked, when offered a position paying $100 a week on condition that he kept his salary secret, "What's the use of having a swell job if I can't talk about it?" Do you see the motive going through all these?

Tipping has lately come in for much discussion and suggestions for revision. It is felt that accepting a gratuity places the recipient in a position inferior to the donor. Certain occupations have such systems of pay that tips constitute a large share of the earnings: bellboy, waiter, barber, porter. It would seem to be more in line with the American way of doing things to raise the price slightly, abolish tipping, and pay the worker a decent living wage. Why should a waiter not be paid from receipts as much as the salesman or bus driver? A $1 dinner equals a 90¢ dinner plus a 10¢ tip. It costs the customer the same, and would set the waiter's occupation higher in the eyes of the public.

II. Labor Agreements

We have mentioned collective bargaining form time to time, without delving into it. There is no doubt that the spread in extent and power of unions has been by far the most important development in industrial relations in the last quarter century. Unions have existed since the guilds of the Middle Ages, but not to any sizable extent until shortly after the Civil War. Now the major unions claim as members 15 million of the 60 million wage earners in the country. This figure really minimizes their extent, as they do not cover at all or to any material degree such large groups as farmers, professional people, members of management, public-service employees, salesmen, small business establishments, and tradesmen. In certain industries, where unions are especially strong, such as steel, automobile, and mining, their membership is probably around 90 per cent of eligible employees.

It is not our province to enter into a debate on the good and

bad points of unionism. It must suffice for us to point out the psychological reasons for their existence and to predict that unquestionably they are here to stay. The traditional individual bargaining between employee or applicant with owner or manager leaves the worker at a distinct disadvantage, both when hired and during employment. So workers banded together to protect their rights against employers whom they felt unfair.

The history of labor-management relationships from the Industrial Revolution around 1790 until at least World War I is far from savory. The picture of billion-dollar fortunes built of workers' blood and sweat is too near the truth to be comfortable. It may well be the truth that had the owners of fifty or seventy-five years ago devoted to the welfare of their workers even a small fraction of the efforts they spent in amassing fortunes, there might not have arisen the necessity of strong unionism today, and our industrial relationships would have been that much more harmonious. Certainly a fair rebuttal to those who bewail the upper hand of labor today, as produced by its own strength and the backing of a sympathetic government, is that the pendulum had swung in one direction for a hundred-odd years, and it is only fair that it swing back for a while. It is to be hoped that a stable equilibrium, or a close approach to it, will be achieved soon.

Organized labor has insisted on its rights being stated unequivocally in writing, in legal or quasi-legal agreements. These embody codes of principles built into a whole, embracing the principal aspects of contact between the two parties. These written agreements first hit large industries in the late 1930's, and nowadays are found in most large companies. Two of the largest, each covering more than half a million workers, are those between the United Steelworkers of America, CIO, and the steel industry, and between the United Automobile Workers, also CIO, and the automobile industry. While printed agreements may contain names of individual companies, and in some cases even single plants, the wording may be absolutely identical from one to another, and whatever variations exist are chiefly to fit local conditions and appear only in minor issues. Major issues, such as wage, seniority, and vacation provisions are virtually identical throughout the industry. There are many other contracts between managements

and various CIO and AFL unions, as well as independent or unaffiliated groups in certain plants. These agreements are usually printed in pocket-size booklets, and typically contain 5,000-10,000 words.

These contracts are serious matters, as witness the "no contract, no work" practice of soft-coal miners when a contract expires prior to completion of new negotiations.

Let us outline briefly the major sections of typical labor agreements, which we may comment are surprisingly alike, even when different unions have negotiated with widely different industries.[1]

1. *Purpose:* a general statement of the desire to promote industrial harmony, and naming the two parties.

2. *Scope:* whom it covers, who is eligible for union membership and who is excluded.

This agreement and the various provisions hereof relate only to factory hourly-rated nonsupervisory employees of the company's plant located at ....., excluding employees of the Plant Protection Department, office, and any confidential employees.

3. *Recognition:* usually that the union designated is the sole bargaining agent for the employees covered. If it is a closed shop, it will be so designated at this point.

The union agrees not to intimidate or coerce employees into membership and also not to solicit membership and/or transact union business during regular working hours. . . . The company agrees not to conduct a lockout or shutdown for antiunion purpose during the term of this agreement.

4. *Maintenance of membership:* if granted, an employee who joins the union must remain a member in good standing to retain his job.

5. *Checkoff:* a provision specifying that union initiation fees and regular dues are to be deducted from pay by management and turned over to the union. Mechanism is provided for settling cases of disputed membership.

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[1] Hill, L., and Hook, C. R., Jr., *Management at the Bargaining Table*, McGraw-Hill, 1945, have presented a thorough and critical survey of the essential features of contracts. The bias, it must be acknowledged, is strongly management.

6. *Wages:* general principles, such as elimination of inequalities, rates for women and apprentices, minimum rates, shift differentials. In smaller companies with relatively few positions the rate for each may be specified, but these are usually worked out in separate negotiations, apart from the formal agreements.

7. *Rate establishment and adjustment:* new and changed jobs.

8. *Hours of work:* the normal workday and workweek, shifts, nonnormal schedules, absenteeism.

9. *Overtime and allowed time:* under what conditions premium pay is given, and when allowed time (pay for work not done, such as company ordering man to report and when he reports no work is available) is paid.

10. *Vacations:* eligibility, length, pay awarded those denied vacation, method of calculating vacation pay.

11. *Seniority:* determination, kinds, and provisions in terms of promotion, order of layoff, break in service, protection in case of illness, accident, or pregnancy. Loss of seniority.

Only where factors "a" and "b" are relatively equal shall length of continuous service be the determining factor in promotion:

a. Ability to perform the work:

b. Physical fitness;

c. Continuous service.

12. *Grievances:* definition, methods of processing, representation by union officers, arbitration procedures.

13. *Management's rights:*

The management of the works and the direction of the working forces, including the right to hire, suspend or discharge for proper cause, or transfer, and the right to relieve employees from duty because of lack of work, or for other legitimate reasons, is vested exclusively in the company; provided that this will not be used for purposes of discrimination against any member of the union.

14. *Suspension, discharge, and disciplinary provisions.*

15. *Safety and health provisions, usually rather general.*

16. *Holidays:* those granted, amount of pay for those compelled to work on these days.

17. *Military service:* job protection, seniority status, vacation pay, procedure for reporting back, union status of veterans.

18. *Duration of agreement:* termination date, provisions for renewal, earlier termination or amendment.

Other agreements are sometimes found between management and certain groups excluded from the production workers' agreement, such as salaried workers (so-called "white-collar" unions); or plant-protection forces. These may form a new and unrelated local of the main union representing production employees, or may vote to join some other parent organization or even to have their own independent local. This complex situation produces some extreme cases; one plant superintendent of industrial relations known to the writer has six different unions with whom to deal.

If one studies these labor agreements, particularly if he also has had the opportunity to see them in action, he will soon realize that they are virtually unilateral in character, since throughout their sections guarantees are given of the concessions management is making to the union and its members. Rarely does management get any concession. It is small wonder that some have described collective bargaining as a rear-guard action, wherein management can do little more than give way as slowly as possible, but can never regain lost ground.

Furthermore the union possesses all the teeth. If management breaks the letter or spirit of the agreement, courts and governmental agencies force compliance and order payment of back wages, retroactive increases, etc. Yet one could search in vain for a union being compelled to pay management for lost production resulting from a wildcat strike. (A recent fine assessed against the United Mine Workers is no exception. This was for contempt of court, for a strike in violation of signed agreement with the government. Management and the public were still the losers.) In one extreme instance when a union staged a strike in violation of its signed pledge, they then claimed that two nonstriking members had sacrificed their good standing, and management was forced to discharge them.

So long as the situation is so one-sided, we cannot expect peace to be achieved. One party cannot expect the second to live up to its agreements, while the first party can treat its signed pledges as so many scraps of paper and be backed up by federal agencies.

Each must assume equal obligations and responsibilities, if it is to continue to receive equal benefits.

There is another element in the situation, also, which stands in the way of completely harmonious relations. The union, composed principally of hourly paid production workers, does not have the advantage of highly trained specialists among its membership as does management. So its bargaining is carried on by its national officers, who are not employees of the company with which they are bargaining, or for that matter of any company. These officers' livelihood depends upon their constantly gaining something for their constituents, and if they have once gained a favorable contract for their members, they have two choices—to consider their job done, or to foment dissatisfaction and make still further demands. So the negotiation is actually between management and union officials, with unfortunately, as Hill and Hook point out, the rank and file of union members often a third and neglected element.

The Taft-Hartley Act provided an example of this. Most of its provisions actually gave the worker himself more freedom, such as abolishing the closed shop and outlawing possible loss of good union status for any reason other than failure to pay dues. Formerly, one who did not already belong to a union could not get some jobs, or one who criticized a union officer in any way might be declared in bad standing and his supervisor would be forced to discharge him. Likewise unions are now forced to give a financial accounting to their members, formerly a secret matter among officers alone. The Act, then, was aimed principally at dictatorial union officials who were no more considerate of their rank and file membership than of management. Yet the hue and cry they set up made many think the law was aimed at union membership itself and the individual member, which is utterly false. An independent survey conducted without naming the Act showed that the majority of union members were in favor of each of ten major provisions, yet when the Act was named the majority was opposed to it as a whole. Such is the strength of uninformed opinion formation!

Contrary to common assumption, a strike is often unpopular with the majority of affected workers, who suffer a severe financial

blow which may take months to make up, even if a raise of a few cents an hour may be gained. And if it is of jurisdictional nature (as to which union shall represent the workers or do a given piece of work) the individual worker rarely gains, and due to its difficulty of settlement he may be in for a lengthy period of unemployment.

III. Union Negotiation

While in any meeting involving people with somewhat different viewpoints each side attempts to come out the better, nothing of lasting value can be accomplished if this is the sole aim. If management attempts to grant employees as little as possible, or if labor tries to squeeze all the gains it can, both sides are cutting off their own noses to spite their faces. The money to dispense, whether in the form of wages or of profits, all must come from the same income—sale of goods or services. Industry's purposes have been defined many times as the production of the greatest quantity, of the highest quality, for the least cost, and with the greatest profit. Two diametrically opposed forces cannot exist side by side without ruining this fourfold objective.

Progressive employers and labor leaders alike are waking up to this fact. The worker with high morale, meaning adequately paid and working under favorable environment and supervision, will produce more and take more pride in the quality as well. Labor knows it cannot perpetually gain wage increases, hold back price rises, and sabotage quantity and quality of output, without ultimate uncontrolled inflation. Quotations from a paid advertisement inserted in daily papers by one forward-looking union demonstrate this recognition (5).

"Dear Fellow Members:

"This is going to be tough. Some of you may get sore. But I'm a 'labor leader.' And what sort of 'leader' would I be if I didn't tell you what I see ahead? So here it comes, straight.

"*Now's the time when you've got to work with everything you have.* You've got to produce and produce and produce. So must all other American union workers. We've been pushing our wages up and up and up. Fine. But if we put our wages up on stilts and don't lift our production up to the level of the stilts, it won't be long before the whole country goes from the stilts to the skids.

"Capital and management can absorb wages up to a point and still reduce cost, reduce prices, increase sales and spread prosperity. But now we've raised wages to where capital and management can't do it alone. Now comes the biggest moment in the history of American labor. Now the unions have got to help capital and management carry the load of more goods, more services and more welfare for the American people.

"Look at our gains in all three companies in our industry. Since 1941 we have had large increases in wages at Hamilton, Elgin and Waltham. And we've had no strikes. You've had other gains too; paid holidays, paid vacations, sickness and accident benefits, pensions, better-aired and better-lighted workrooms—all adding up to higher costs for your employers.

"Best of all, you have new dignity and security. You can't be fired now except for just cause, subject to review and arbitration. And our union has security, too.

"A few years ago our employers had it all their own way. Now the pendulum has swung toward us. Are we now going to be as unfair to our employers as they once were to us? Or are we going to show some sense? Not for their sake, but for our own. Because, listen!

"Sales make wages. Production makes sales, and low-cost low-price production makes more sales. In the last year our employers have put out more money on payrolls and tools than they have taken in out of sales. For the last 20 years their average profit per watch has been less than a dollar. Profits are necessary. Only out of profits can our employers give us better tools for better production, out of which we can get our cut in bigger wages.

"We've got to help our employers make good profits.

"Some guys will yell: 'So you're "company-minded."' Sure, I'm 'company-minded.' I'm 'union-minded' too. A man who is only 'company-minded' and who can't see the union except as something to fight is a class-struggle man; a man who is only 'union-minded' and who can't see the company except as something to plunder is a class-struggle man. To prevent the class-struggle from wrecking the country, America must be 'union-minded' and 'company-minded' both."

We are not suggesting that union negotiation is necessarily a battle, with one side the winner and the other the loser. Those who think of labor-management relationships as battles would have their eyes opened if they could follow an industrial-relations executive, or a union grievance committeeman or district director, on their daily rounds for a few weeks. He would usually see the two call each other to arrange a friendly meeting, address each other

by first name, have lunch together, and discuss things as level-headedly and in as friendly a fashion as two friends planning a golf game. A leader in either fold is not worthy of the name if he cannot refer to the other party (as is done too often) without use of terms of abuse or profanity. Granted there will occasionally arise divisions of viewpoint, slow decisions, unwillingness to compromise, and occasional loss of temper; but the "knockdown, drag-out" sort of dispute is the exception.

Local negotiations deal with relationships which are not of magnitude or character to warrant their inclusion in the formal agreement, but which settle or forestall sources of potential disagreement. Several examples of typical negotiation problems are listed below.

Between May 15th and October 1st, relief cranemen will be provided on the soaking pit cranes, on the following bases: if temperature inside the cab exceeds 90° the regular operator shall be relieved for a half hour every second hour; if the temperature exceeds 80° he shall be relieved a half hour every four hours.

Those time clerks who are losing their positions due to installation of automatic time clocks shall be retained as clerks at their former rate as long as they remain within the company's employ, but future replacements shall commence work at the lower rate for recording clerks.

There shall not be more than [a specified] per cent of apprentices in proportion to journeymen in any department within the plant. Apprentices in excess of this percentage now being trained shall be retained, however.

Construction work within the plant costing no more than $500 may be done by the regular plant maintenance men, but any repairs or construction exceeding this figure shall be negotiated with the appropriate union. [This is not an agreement with one's own union, but with rival unions in the same city.]

We shall not devote much space to actual methods of handling union negotiations, both because few readers will actually engage in them, and because the problems are so varied that whatever we could say in even an entire chapter would be woefully inadequate.

The major principles of dealing with unions are not much

different from any kind of bargaining activities (2). Union negotiating has been surrounded with an air of mystery, as if it were something absolutely unique, which could only be approached by a superman, and then only with trepidation. Possibly the only unique thing is necessity for absolutely thorough knowledge of the industry or business in which one is engaged. One could never have his collective bargaining handled by an outsider even granted he might be the best negotiator in the world. The only assistance an outsider might furnish would be technical aid in preparing one's campaign.

Usually one individual is spokesman for the company, preferably a high industrial-relations official who is completely informed and thinks well on his feet. Lawyers have been used, but they are inclined to be wordy and technical. It is imperative, however, to have legal talent inspect manuscript of a contract or negotiation before signature, since a lawyer is trained to ferret out the significance of clauses, which with only amateur inspection might be capable of later interpretation other than originally intended.

The industrial-relations staff member must remember that he is pitted against intelligent, well-trained, well-informed, and zealous antagonists. He cannot be careless or minimize the toughness of the game he is to play. He must be thoroughly prepared, in which factor he should have the advantage much of the time, since he has access to confidential cost and production figures which the union does not possess as completely or as accurately. Preparation must be started well in advance of actual negotiations, and no stone can be left unturned. One can keep his ear to the ground by noting rumors, spotting grievances, watching for common sources of dissatisfaction, and predict with a high degree of accuracy just which demands are coming up. The writer, for example, predicted a year in advance of negotiations that increased vacation provisions would be a principal item of union demands in one industry. The more facts and figures one can muster the more chance he has of winning his case. Generalities or abusive statements will get nowhere.

While there may be a certain amount of bluffing, as in any form of business dealing, in union negotiation one must be prepared

to stand the gaff in case his bluff is called, even if it means an interruption to production—i.e., a strike. Furthermore, a concession should be granted gradually, in several stages, and not all at once, even if one is prepared in his own mind to give in to the full extent. One should remember that union strategy commonly calls for making stronger and more numerous demands than it believes management will concede. Certain demands are smoke screens, and the secret goal may be a third of the separate demands made and wage increases a third the amount they ask at first.

Finally, when the overall agreement or detailed negotiations are being prepared for signature by both parties, watch out for ambiguous clauses and ones which can be used later as precedent for much more far-reaching demands. One can take warning from the portal-pay suits, in which unions seized upon a trial court decision to award extra pay for the time spent changing clothes and walking to the place of work in a small Michigan pottery, to make nation-wide demands for similar pay concessions which would have amounted to five billion dollars annually. This was carried to the Supreme Court before these claims were ultimately invalidated.

Grievances

A. Definition

A grievance may be defined as dissatisfaction of an employee with some aspect of his work. It may be against pay, working conditions, fellow workers, supervision, company policy or practice, or factors outside of the job which are produced by occupying that job.

The term grievance is also used in a technical sense in formal union negotiations to cover an item of dissatisfaction which the employee has discussed with his supervisor and to which he has not received a satisfactory answer, hence puts his complaint in writing and appeals to higher supervision.

Since we are dealing primarily with the psychological aspects of industrial relations, we shall adopt the broader view, and consider as a grievance any sort of annoyance, whether written, on a spoken level, or even merely in the worker's mind.

Outlooks on Grievances

We have termed a grievance anything about a man's job or working conditions which irritates or fails to satisfy him. It is just as real to him when it is imaginary as if it were based on actual facts.

Nick came to his foreman and said, "Say, something has bothered me lately. You've hardly been speaking to me, and have been hurrying right on by me. Are you sore at me for anything? Is there anything the matter with my work? We've been friends for a long time, and I don't want anything to come between us." The foreman thought a second, and answered truthfully, "Why no, of course not, Nick. You've been doing your usual fine job. Maybe that's why I haven't needed to spend much time with you lately. I have been pretty busy breaking in those new men. Sorry I seem to have passed by you without stopping to chat."

Wasn't this a good way to handle it? He took the time to reassure Nick that there was nothing at all wrong, that he liked him and his work as much as ever. And he didn't make fun of him because his grievance wasn't justified; he gave him a courteous, complete, and true answer. It only takes a few seconds to be polite.

Remember that a grievance is a man's own, and is extremely important to him. Just as it is as tragic for a child to break his toy automobile as for you to wreck your own car, an employee's grievance can never be treated as trivial. Ask yourself, "What does this mean to Nick?" and not "What does it mean to me?"

The most important single thing to remember about grievances is just this: DON'T LET A GRIEVANCE ARISE. As a supervisor one has partly failed in his duties if a grievance is put into writing and has become a bone of contention between union and management. A supervisor sees his men work, talks with them, and should be able to detect friction before it becomes serious. This is the time to prevent it, as in the old saying: "Most fires could have been put out with a teacup of water thrown in the right place at the right time."

Going one step farther, if a man is treated well and has developed a high degree of morale, he will overlook little things which might cause serious trouble in another department with low morale. Or

he will be more likely to call attention in a constructive and friendly way to an unpleasant working condition, time-wasting methods of checking in and out of the gate or of getting tools and materials, annoying supervisory practices, or unfair management policies.

Types of Grievances

1. General:
   - A. Grievances against the company
   - B. Grievances against supervisors
   - C. Grievances against fellow workers
   - D. Grievances against the department
   - E. Grievances against the job
   - F. Unwarranted hazards surrounding the work
2. Causes of a physical nature:
   - A. Pay system
   - B. Poor materials, especially if on an incentive system
   - C. Poor "housekeeping" (messy place of work)
   - D. Bad working conditions
   - E. Plant layout inefficient and time wasting
3. Supervisory causes:
   - A. Lack of clarity of policies
   - B. Working at cross purposes
   - C. Breaking promises
   - D. Unfair judgment of merit
   - E. Favoritism
   - F. Public bawling out
   - G. Not granting minor privileges or concessions
   - H. Poor planning
   - I. Carelessly given instructions
   - J. Improper distribution of overtime
   - K. Undue delays before action is taken
   - L. Lack of interest in the quality of one's work
   - M. Lack of interest by the supervisor in promotional possibilities of his men
   - N. Publicity about one's pay
4. Outside affairs: status of company in community, outside quarrel with other employees, unfavorable comparison of company with others as organization to work for
5. Imaginary grievances

C. Types of Grievances

Analysis of hundreds of grievances, spoken or formally written, produces the major classifications shown in Table 42.

D. Preventing Grievances

There are three main ways of handling grievances: (1) by preventing them from arising at all; (2) by nipping them in the bud before they get serious; and (3) by curing those which have become full-fledged grievances. Each step is harder to handle than the one before it, and the bad taste lingers longer.

Some hints for preventing grievances follow in outline fashion:

1. Be on the alert to detect trouble brewing.
2. Take a genuine personal interest in workers and their problems. This is always flattering, and will go a long way toward preventing grievances from arising at all.
3. Make conditions of work as pleasant as possible. If matters can't be made perfect, explain to the workers, ~~as did a manager of a small mill:~~

> A group of men came to him, complained that the roof was leaking, so every time it rained they not only got wet, but the floor became muddy and unpleasant to work on. So the manager invited a few of them together and said, "Well, boys, we noticed that long ago, and have been thinking about it. But you know business hasn't been so good, and our orders have dropped off a lot. We have saved all we could to avoid cutting into your pay envelopes, and are trimmed to the bone in all other directions. We figure that a new roof will cost $40,000, and that would mean a pay cut for you fellows. Would you mind putting up with the old roof for a while? I can promise you this—as soon as we get out of the red and into the black, the company will put aside a certain sum from the profits toward rebuilding that roof."
>
> From a complaint, the situation became an asset. The men felt that management was doing all it could, had looked into the situation before as evidenced by their having already determined costs, and had promised a new roof. The fact that management had thought of it before the grievance arose proved to be the trump card.

4. Treat the workers so they will want to follow you from loyalty and genuine desire, not fear, threats, and browbeating.
5. Do your best to develop such enthusiasm that minor sources of irritation are either ignored completely or accepted as unavoidable.
6. Treat every grievance as if it were the most important matter in the world, which it probably is to the complainer at the moment.
7. Explain policies fully, preferably by means of posted bulletins. Be consistent, and notify employees immediately if a change is put into effect. Unfairness and inconsistency lead to low morale, breed disloyalty toward the company.

Satisfying Existing Grievances:

1. Make a practice of always keeping your door open. Industrial-relations men have made the blunt statement that other work must be extraordinarily important to warrant preventing a man from stating his complaint. As in psychoanalysis, the worker must have a safety valve or an emotionally toned grievance will multiply itself all out of proportion. It is said that the supervisor who says he has no grievances is only admitting that he refuses to hear them.

2. Let the aggrieved person tell his story to you, *in private.* It may be very personal or may involve someone within earshot, so retire to a private office or some other quiet spot.

3. Listen to the *whole story.* There will likely be repetition and wandering, but telling the whole story with no reservations will help the worker talk himself out of his grievance.

4. Be a good listener, as in any form of interview. The writer has seen this motto posted in an executive's office:

LISTEN
LISTEN
LISTEN

5. Permit steam to be blown off. Let the worker tell his side fully and in his own words, even if he becomes abusive. It will help him calm down, and perhaps on his own initiative he will retreat a little from his extreme position.

6. Hear both sides of a case before you come to any conclusion. It is imperative, in case of dispute between two individuals or two groups, not even to hint at a decision until you have heard all of the evidence from both sides.

7. Be willing to admit your mistakes. Putting up a smoke screen to cover a mistake is a real injustice, will make the grievance worse, and will lower the worker's opinion of you.

8. Put yourself in the other man's shoes. His problems are very serious to him, even if not to the world at large. A shunting remark such as "Oh, don't worry about that; go on back to your work," is not handling a grievance—it will merely keep the fire smoldering.

9. Ask the griever to suggest a solution. This will tend to raise the complaint onto an intellectual level from an emotional plane.

A foreman threw a challenge into some veterans who complained about the slowness of following safety rules, by giving them a sheet of paper and asking them to list all the *good* reasons they could think of why they should not follow regulations. As one man observed, "At first I was mad at him for putting us out on the end of the limb; then I realized we had put our own selves on the limb."

10. If "No" is necessary, say it courteously. A decision should not be based on "I'm the boss," but on the basis that you have to base your decision on all the evidence for and against, and that the best interests of the company and all its personnel will be best served by not granting the request.

11. Leave room for "face saving." If you have to deny a request, explain the reasons tactfully, without belittling or implying stupidity, that the idea has merits but that it is not feasible. But by all means don't insult or belittle.

12. Make your decision fair from a human standpoint, not merely correct according to rules or cold logic.

One foreman, when a night shift became necessary, decided that the married men should be given the day turn and single men should work at night. It had not occurred to him that single men might have as many and perhaps more social obligations. When they complained after a few weeks, he listened courteously, understood their point, and split the two groups between the night and day shifts and arranged a rotation every four weeks.

13. Take care of a grievance promptly. Emotional tension builds itself up to a higher and higher pitch until it spills off. This ties in with the "open-door" policy.

14. Keep your own temper under control. Nothing is accomplished if both parties get angry and shout at each other. It is up to the supervisor to preserve his dignity, hear the story out calmly, and then discuss rationally the pros and cons.

15. Profit from grievances. Keeping track of complaints will often disclose clusters. If many of them center around two or three main points, such as one working condition or one aspect of supervision, one should immediately investigate the situation and take steps to improve the condition, without waiting for further grievances to arise. Naturally, a single grievance may be very important, but several similar ones almost invariably prove there must be some fire behind the smoke.

16. Don't permit, encourage, or engage in buck-passing. The immediate supervisor is the first point of contact. He represents management to those under him, they must deal with him first, and he must give proper disposition to their requests.

A foreman was reprimanded by the superintendent for not having repaired a broken window that was causing a draft. Several employees had seen the superintendent about it. The foreman in turn asked the men why they had by-passed him, and was told, "We saw you four times during the last month, but you were always too busy to do anything about it." Such neglect encourages by-passing, and lessens confidence in their opinion of the foreman's genuine interest in their welfare.

17. Never attempt to handle another supervisor's problems. Remember lines of organization. If you detect something wrong, you may tactfully pass on what you have heard or seen to that supervisor, but never take sides.

18. Have means of processing grievances well understood. If grievance machinery is provided, help workers to use it as wholeheartedly as you would assist them in using a company initiated procedure.

F. Formal Grievance Procedure

In Table 43 we present a skeleton summary of a typical grievance procedure, one between a CIO union and a large corporation. One interprets this as follows. An employee has a complaint, dis-

TABLE 43. Grievance Steps in a Large Company with Several Plants

Step	*Union Representative*	*Management Representative*	*Time for Management to Reply*
	Employee	Foreman	Informal conversation
Step 1	Employee, and dep't grievance committeeman, if employee desires	Foreman	3 days
Step 2	Department grievance committeeman	Dep't sup't	10 days
Step 3	Plant grievance committee	Plant gen'l sup't or his representative, *usually sup't indus. rel.*	10 days after next regular meeting
Step 4	International union	Company management, usually vice-pres. of indus. rel.	10 days after joint meeting
Step 5	Three man board of arbitration: union, company, neutral chairman; decision final—no appeal by either side.		

cusses it with his supervisor, but no satisfactory agreement is reached. He then puts it into writing, in accordance with detailed procedure described in the labor agreement, and with or without his departmental grievance committeeman presents it to the foreman for decision. The foreman must answer for management within 3 working days. If the employee is still dissatisfied, he can appeal into Step 2, and so on.

V. THE PROBLEM EMPLOYEE

A. Symptoms

Symptoms of employee maladjustment are seen in such behavior as:

- Indifference
- Decreased production
- Poorer quality of work
- Loafing
- Carelessness
- Chronic absenteeism and tardiness
- Rule breaking
- Arguments and friction
- Jealousies
- Chronic complaining
- Labor turnover
- Frequent illnesses
- Poor housekeeping
- Trouble-making

Furthermore, individual cases of maladjustment will be spotted by other forms of peculiar behavior observed at work, reported by fellow employees, or narrated by the employee himself to his supervisor or to an industrial-relations member.

Types of Employee Problems

Several major categories follow:

1. *Health problems:* chronic hospital users, compensation and sick-leave cases, overfatigue cases, and definite nervous and mental disorders. These cases are characterized by their frequency and recurrence rather than by a single episode. Sick-leave cases, whether or not salary may have been continued, may be unduly prolonged and may recur if the going is a little tough when the individual returns to work.

2. *Inadequate intelligence* in itself does not cause maladjustment, but, as we saw in Chapter VIII, College Personnel, sets up a situation in which the worker constantly meets with failure and unfavorable comparison with others, so he eventually breaks down.

3. *Breakdown* under pressure, or in a crisis, may result in illness, failure to report tomorrow, quitting without notice, chronic drifting from one job to another.

4. *Instability:* chronic absenteeism, habitual tardiness, alcoholism, breaking rules, defying authority, persistently doing things in a different way, frequent change of jobs.

5. *Self-centered* to an extreme degree, self-assertion in all matters without compromising one's share of the time.

6. *Persistent troublemaker:* getting into several times one's share of disputes with foremen and fellow workers, over tools, etc.

7. *Interested in only one thing:* will do only one kind of work, refuses to switch to help out in case of emergency, and dodges his share of the unpleasant work.

8. *Emotionally immature:* superficial, interests fleeting, overdependent on supervisor and other employees.

9. *Paranoiac:* false belief that fellow employees and supervisor

are criticizing him, making fun of him, talking about him behind his back, plotting against him to make him or his work look bad.

10. *Definite insanity:* occurs rarely and is not within the scope of most company organizations to attempt to diagnose and cure. If there is suspicion that major maladjustment exists, competent psychiatric diagnosis should be made before the employee's condition becomes more serious or he endangers other employees.

11. *Legitimate conflicts* must be mentioned, for fear that one might think all cases of maladjustment indicate inherent weakness of the employee, or failure to adjust to the job. There may be faulty job placement, failure to promote when it is in every way justified, legitimate change of interests, home worries, genuine health problems, economic insecurity. The maladjustment, nevertheless, is real, the employee is justified in his dissatisfaction, and management has the obligation to rectify the situation.

Relief of Dissatisfaction

There are perhaps four principal methods of handling problem employees: (1) discharge; (2) transfer from the present to a new location; (3) institutionalization; and (4) mental hygiene. The first three are unsatisfactory ways of solving conflicts, and merely relieve present supervision of having to deal with the employee. The problem still exists, and is only shifted to someone else, in extreme cases to society at large.

Mental-hygiene methods consist in individual analysis of the problem and of the employee, fellow employees, working conditions, factors away from work, and company supervision and practices. Such analysis demands expert assistance, rarely found within the organization. Many firms have a mental hygienist available as a consultant to properly analyze and handle such cases, make recommendations for constructive solutions, and assist all parties toward a favorable adjustment. Merely removing the symptoms, such as giving the employee sick leave or transferring him to another scene of work will almost certainly fail to provide a lasting cure. The true cause is only temporarily covered up, and will

probably recur. Sick leave or transfer may in a few cases effect a solution, but should be used only if the expert adviser is convinced that such handling will relieve and not merely shift fundamental conflicts.

In many cases a gradual personality adjustment may be brought about by making the employee realize the underlying factors involved, and through a series of conferences build up a gradual adjustment. Supervisory practices adapted to the individual worker should follow psychological knowledge of individual differences in personality traits, and may salvage excellent employees who are temporarily maladjusted. Training when the person was first employed may have been inadequate, and he fails to derive satisfaction from his work. Good work may have been passed by, and he may have become discouraged. Judicious praise is never amiss, and to some it may be much more important than to others. Transfer should only be used where it is felt after careful consideration that maladjustment will not arise a second time from the same general cause in the new environment from such factors as conditions of work, supervisor, or fellow employees, which will not often be materially different in the new job.

By way of summary, we cannot in a limited space suggest techniques or even broad methods of dealing with problem cases. Each case is individual in nature, requiring careful diagnosis on the part of an expert and individual treatment. A supervisor, however, is that much better off for recognizing the signs of maladjustment, having a tolerant attitude toward the employee and the situation in which he finds himself, and realizing that the majority of cases can be straightened out in an early stage if he has a sympathetic attitude and makes a legitimate attempt toward a constructive solution.

All parties will benefit from such a solution, especially the employee who is assisted toward leading a more satisfying and happy life. The company will retain within its services a more loyal and effective worker, and the time and expense of employment will not have been lost. Society will be spared a person who is likely to become progressively less and less employable and may eventually be supported through unemployment relief, or even in an institution.

VI. Employee Welfare

As a college supports athletic teams, publications, dramatic and musical productions, and social affairs, business and industrial concerns often find it beneficial to sponsor activities apart from work. These work best if: (1) they are controlled so far as possible by employees below the executive level, (2) have company regulation only to the minimum degree necessary to make sure company interests are not jeopardized, and (3) are financially supported by the company.

Before listing briefly the various forms these activities may take, let us say that their success depends far more on the attitude shown by the company than the nature of the activity or the lavishness of facilities provided. Employees will refuse to live in model houses or swim in a million-dollar pool if they are provided with the air of "See what we are doing out of the goodness of our hearts for you inferiors." The writer has seen two practically identical company housing projects, equally attractive, and with equally modest rents, where in one case the employees preferred to live in poor surroundings in a nearby city, while in the other there was always a long waiting list for a vacancy. Why? In the former the company set itself up as being magnanimous and expected constant thanks and gratitude. In the second, the owner, a former worker himself, dedicated his plant to the workers, and really meant it, and he was constantly looking out for their interests.

Let us list quickly a few employee organizations and facilities, which are best classed as morale builders:

1. *Employees' homes,* often with stores and recreational facilities.

2. *Mutual benefit associations* are formed to take care of illness, accidents, life insurance, and old-age pensions. A percentage of each wage check may be deducted and placed in a fund to which management contributes an equal amount. These funds take care of one of the worker's most serious worries—stoppage of income because of inability to work.

3. *Stock purchases,* often at below the market prices and on an installment basis, may be provided. Occasionally a stock bonus in

addition to regular wages is given, sometimes to executives, and sometimes the opposite course is taken of excluding those above a certain rank.

4. *Recreational facilities,* athletic or social, provide mutual interests for employees outside of working hours. One's life is tied up in his work, and friends are often among people with whom one works, so additional interest in work is thus stimulated. If a man enjoys himself playing on a factory team, or representing his department in bowling, softball, or basketball against other departments, he will be more inclined to stay with the company and be a loyal employee. The place of work is rendered one where friendships are formed and good times had. The company usually supplies gymnasium facilities and equipment. Picnics, for employees and families, at company expense, will make the outfit seem a more human affair.

Some plant owners who are especially interested in sports have been known to be active in recruiting well-known athletes as employees. An owner of one paint company has hired basketball stars as research chemists—without too close inquiry as to the amount of chemistry studied or grades earned. Some employees may take a lot of pride in these teams, but others who are less interested in sports resent fellow employees holding soft jobs solely for their athletic prowess.

5. *Company magazines* have as their purpose inculcation of feeling about the company as being more than a business organization, but also a human place to work. Some magazines are truly employee publications, while others are management dominated and used to spread management's philosophy and doctrines. These latter, the writer feels, are less interesting, sometimes to the point of not being read by the majority of workers.

6. *Community betterment programs* cover such things as hospitals, parks, swimming pools, libraries, and even summer camps for employees on vacation or for their children. Hospitals are felt by many companies as definite obligations, especially where the company is the dominant industry in town, since injured or ill employees depend upon their facilities, as well as their family members and fellow townsmen. The company, to maintain its

status in such a community, must stand a major share of the expense in building, equipping, improving, and maintaining a hospital.

VII. Labor-Management Committees

There have been many suggestions that labor be given more voice in certain phases of plant control. The idea is of course highly controversial, as some regard it as an attempt on the part of labor to gain a foothold in management's province, while others feel that there are many problems which can be handled more advantageously if all parties concerned have a voice in them. While labor agreements generally reserve solely to management such functions as scheduling, products to be manufactured, employment and disposition of the working force, there are other problems which can profit from mutual discussion.

During the war several thousand joint labor-management committees were established in many industries. A brief description of the nature and working of these, with several of which the writer was closely associated, will illustrate the type of cooperation which is possible.

The committees were composed of equal numbers of management and labor representatives. While each party made its own nominations, it worked best to have supervisors from the middle brackets represent management, and not to have too many grievance committeemen or union officers represent labor. The committees had regular meeting dates; and subcommittees, usually made up of one labor and one management representative, often worked on special problems.

Some of the principal activities were: employees' suggestions; control of absenteeism; transportation problems—share-the-ride, bus schedules, gas and tire rationing—war-bond drives; drives for Red Cross, Community Fund, USO; billboard and poster displays to boost production and assist in other campaigns; conservation of tools and materials; safety; contacts with employees in service; blood donations; victory gardens.

The success of these committees naturally varied. In some plants they accomplished a good deal; in others they existed in name only. Their success depended largely on the attitude with which

they were introduced and installed. If management decided to keep the upper hand, committee enthusiasm suffered. If labor tried to use them to effect one-sided gains, or to discuss pay or grievances, their usefulness likewise disappeared. But it can be said truthfully that both parties accepted their obligations and agreements exceedingly cooperatively in most instances.

The practical good that comes from such work is not usually measurable. For instance, many plants sponsored victory gardens, on company property, plowed and fertilized at company expense. Several thousand employees used these plots, and questionnaire surveys showed that quantities of food were grown. Share-the-ride groups produced such results as in one plant where the average number of employees arriving at work increased from 1.3 to 3.7 per car. Supplementary gasoline coupons were recommended only to employees who had extra riders. This conserved cars and tires, as well as gasoline. Many committees were so active in war-bond campaigns that more than 90 per cent of the employees in their plants bought bonds through regular payroll deductions.

Perhaps the greatest constructive achievement of these committees was through the employees' suggestion system. While a few companies had instituted formal suggestion procedures as much as twenty-five years ago, it was not until the war that they became widespread. Employees were urged to turn in their original ideas along lines of production, economy, conservation, increased efficiency, and safety. Typically the procedure is as follows: employees put written suggestions in boxes, from which they are collected every day, referred to the appropriate department superintendent for evaluation, and finally accepted or rejected by the committee on the basis of recommendations and their own final judgment. Cash prizes are usually awarded to suggestion winners, and often a lapel pin is given as a further mark of distinction. Some companies pay a flat sum for accepted suggestions, while a fairly common (and preferable) method is to pay say 10 per cent of a year's savings. Thus if a production suggestion creates $1000 extra production during the next year, the employee is given $100; or if it saves $300 of heretofore wasted materials, the contributor receives $30. In addition, notation of an accepted suggestion is made upon

one's personnel record, and this will count in his favor when promotion is being considered.

It is quite possible that the influence of labor-management committees is far greater on morale than on anything more tangible. The writer overheard a significant remark interchanged between two top "city-office" executives at a dinner of these joint committees representing about a dozen plants, and involving about 50 labor and 50 management representatives. One said to the other, "Who would have thought ten or fifteen years ago that a group such as this could have sat down to a dinner in such a spirit of comradeship?" It is hoped that this spirit infiltrates to other employees, even granted that in a large plant with only half a dozen labor representatives contact with the committee is spread thin. These others, however, can see the products of committee activities, in fellow workers receiving suggestion awards, in transportation and gardening activities, and other functions.

VIII. Morale

"Morale is what makes your feet keep going when your head says you can't," said by a nameless soldier, is as good a definition of morale as one can find.

All the preceding problems we have discussed in this chapter, and for that matter most of what we have taken up in the seven preceding chapters, especially the ways the problems are handled, add up to the one word—MORALE.

Rather than a formal definition, it will be more meaningful to describe the conduct of an individual or a group with high morale —greater loyalty toward the company, pride in working for that company, more effort and enthusiasm in work, greater willingness to accept supervisor's orders, higher production, less absenteeism, and lower rate of turnover.

A number of companies have conducted morale surveys on their employees, but most findings have not been published, possibly because management has feared adverse effects from publishing criticisms. Since true answers may not be given for fear of possible reprisal, the ideal technique is to employ an outside firm of consultants to ascertain employee feelings toward jobs, supervisors, and company. In one study a confectionery manufacturer surveyed

five plants with a total of 722 employees (*3*). Anonymous questionnaires were dropped into locked boxes, and reports were sent back to management in tabular form. Any individual comments that were relayed back were typed to avert any possibility of tracing handwriting. The questionnaire was in multiple-choice arrangement and dealt with such questions as fairness of foreman, opportunities for advancement, disciplining by foreman, company treatment of employees, and opinion as to plant morale.

While responses to individual questions are not of special concern to us here, although obviously important to company management, several trends are noted from inspection of Fig. 21.

In two of the plants there was uniformly low morale on all three divisions of job, boss, and company, while two other plants showed favorable attitudes on all three topics. An important finding was that morale definitely declined with length of service, hitting a low point with the five to nine year group. As the consultants who conducted the survey observed mildly, "Since morale does not rise as expected (with time served), management will note this condition with concern." While uncritical enthusiasm might be expected to decline a little with habituation, it should concern management that more and more favorable attitudes are not built up as service continues. There must be unsound conditions existing when employees become progressively less and less satisfied. Management should study responses to individual questions, also, to discover the exact sources of annoyance.

Factors producing low morale among employees, according to one survey (*4*), were salary inequalities, lack of confidence in the fairness of promotion procedures, poor supervision, and lack of proper employee training. Bad supervision can be added as a cause, as described in a shipyard example, where organization was so confused that men lost all pride in work, and with it morale in all its phases sunk to a low point. Morale can be strengthened by the recognition of basic employee needs, attention, consideration, fair treatment, consistency, understanding, setting a proper example, and giving opportunity for self-expression.

These causes are virtually identical with causes of grievances, discussed earlier in this chapter. As with grievances we must look beneath the surface causes of dissatisfaction, to see what the under-

lying cause is. When, as actually happened, members of a department in a large mill staged a sit-down strike when the drinking

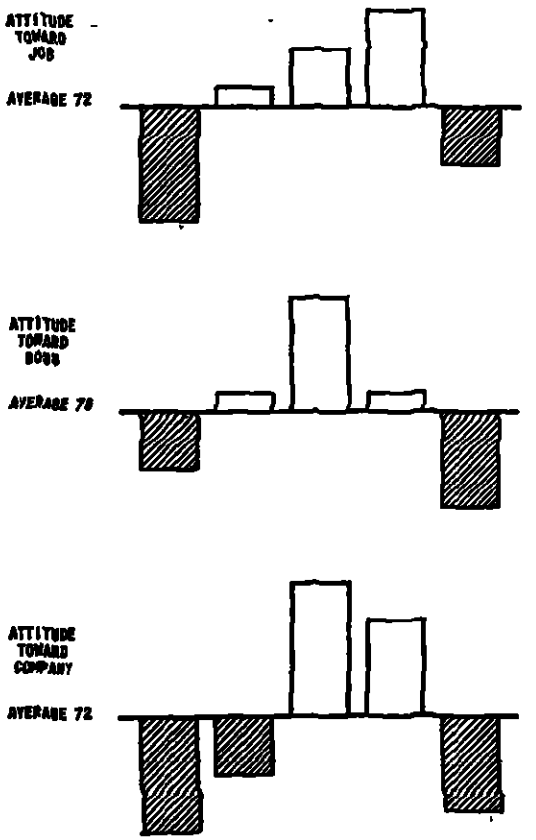

FIG. 21. Morale Indices for Five Plants (New York, Chicago, Cleveland, Detroit, Jersey City) of One Company. (Courtesy *Modern Management*, published and copyrighted by The Society for the Advancement of Management.)

fountain went out of action, it was very clear that this was not the true cause, especially since the water was only shut off for half an hour during December. There must have been underlying dissatisfaction to produce a work stoppage on such slight pretext. If

morale had been high there would have been no trouble on such a trivial issue.

Following this reasoning one step further, dividing causes of grievances or low morale into those centering about (1) human *factors and (2) physical causes, probably stops one step short* of the complete truth. Physical causes—drinking fountain, heat or cold, dirty locker room—are avoidable in all but a few isolated instances, and definitely come back to management. If we concede, then, that repeated strikes are evidence of low morale, then management is responsible, directly or indirectly, for the majority of work stoppages. To arrive at fundamentals one must ask a series of "Why's." A department has a high turnover rate and several work stoppages. What are the reasons? Why, then, are these conditions permitted to exist? Why has management not corrected these conditions, or if they are uncorrectable (such as extreme heat near a furnace), why has it not so selected and instructed employees that they are fully informed of the conditions into which they would step?

Building morale comes next. It is not sufficient to discover and eliminate sources of annoyance and grievance. The workroom may be a palace, pay may be generous, and supervision may be fair to the point of benevolence, yet loyalty may be utterly lacking. Morale is a positive force, not mere absence of conflict.

Let us not appear to be uncritically sanguine about achieving an industrial utopia. There are bound to be conflicts between labor and management, just as between one level of supervision and another, between producers of quantity and inspectors of quality, and between those who control the purse strings and those who wish to spend or receive the money. Compromises must be made, and we cannot completely satisfy everyone all the time.

Several suggested methods of building morale follow:

1. Since morale is clearly demonstrated to be the end product of personnel methods and practices, we must start with these, and institute and maintain proper selection, placement, promotion, recognition, and treatment.

2. Supervisory attitudes that can lead to good morale have been written about many times, but unfortunately are not practiced a small fraction of these times. Sound attitudes must be put into

effect, and not merely written in company policy, spoken at executives' banquets, printed in releases to stockholders and company magazines, or placed in pay envelopes. Lip service will be repaid with compound interest in poor morale and disbelief in further pronouncements. Change of attitudes is a matter of actual behavior. The task is not easy, as McMurry points out:

"In a mature organization . . . it may take as long as twenty years to bring an end to existing abuses and create a spirit of loyalty and good will among the employees. . . . Habits are strong and people resent change, even when it is in their own interest. . . . The danger in moving too rapidly is that insecurities or maladjustments are likely to be intensified. This, then, arouses anxiety. It in turn is reacted to with antagonism. . . . A long time is required because the attitude of the entire organization must be changed" (8, p. 63).

3. Establish teamwork with management. Management and workers have the same goal in the end, and if it is not reached both groups are losers. It is to management's interest to have workers perform up to their capacity, and this capacity cannot be attained without favorable morale, just as it is to workers' interest to make enough goods for sale to enable management to meet its payroll. That teamwork can be achieved was evidenced by the amazingly large and rapid production of war materials. Both parties had a common goal in defense of the country, and a common outside enemy to be defeated. Objective proof of cooperation is seen in figures showing time lost due to strikes to be seven times as great in 1946 as during any war year. When the need for cooperation had passed, much cooperation disappeared. Proper cooperation should not need so vital an incentive as self-preservation. We have seen what can be done, and that should be our goal to repeat in peace time.

4. A share in assisting management will raise one's price and interest in his work. In most cases the worker is not only not encouraged to think, but he is actually discouraged against using his imagination and taking any initiative. Employee suggestion systems and committees of workers to advance plans on specific problems are two such means.

5. Personal recognition can be produced through acknowledgment of any achievement of the employee by mention or picture in the company magazine, on bulletin boards, or through personal greetings and thanks from the boss. Service pins are used by most large companies, the first usually after ten years' service, and followed up by distinctive and different ones each five years thereafter. Banquets may be held for twenty-five year employees, in groups once a year, with each medal or watch presented separately by a top official. Anniversaries, births, or deaths in the family, school honors won by children, etc., are close to the hearts of individual employees, and recognition is appreciated.

6. Opportunity to blow off steam has been suggested as a means of relieving tensions, as discussed in connection with grievances, but this is more negative than positive, and the goal should be to make this necessary as seldom as possible.

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CHAPTER XVII

CONDITIONS OF WORK

I. PROBLEMS

One's working environment is an important aspect of his vocational satisfaction. In addition to the duties of his job are such factors as fatigue, illumination, temperature, ventilation, noise and distractions, monotony, and the human factor of supervision. Any of these may have direct effect on work and output, and indirect effect from their possible influence upon morale. Occasional noise, odor, or high temperature may not particularly bother one, but if long continued one may become more and more annoyed and may finally find conditions unbearable.

Industrial Fatigue

A conspicuous fact about modern industrial society is the constant pressure and strain surrounding work, especially factory toil. A man cannot set his own pace, as a farmer or storekeeper does, but he must keep up with his machine and in pace with others who form an intricate working team.

It is obvious enough that fatigue results from work, so cannot be entirely eliminated. But proper setting of pace, like a distance runner, will enable one to maintain a good level of production throughout a full day and still not be utterly exhausted. Control of industrial fatigue can increase production, decrease wasted materials, reduce accidents, and save days lost due to illness. This increased efficiency can mean higher earnings, fewer hours to achieve the same output, or both.

Nature of Fatigue

Fatigue is caused by muscular work, more specifically by contractions rapid enough so that certain chemical changes take place faster than their reverse action can bring about recovery. Fatigue, therefore, is cumulative—the longer one works the more fatigue products accumulate and the less reserve energy he has available. Fatigue products are carried throughout the body. For example, one who has become tired from running (leg work) will find himself unable to chin himself (purely arm work) as many times as when he is fresh. This point is not of theoretical significance alone, since it applies to the suggestions sometimes advanced that fatigue will be relieved if one changes activities. This theory is obviously false. If one is genuinely tired—not bored or cramped—nothing but rest will suffice to bring about complete restoration.

Curve of Work

Fatigue does not start immediately, but there is a definite period of time during which maximum work goes on. We present in Fig. 22 a generalized curve of work, with the significant points labeled. The time and output values are of course theoretical, as they will vary according to the speed and type of work. But the proportions and general features are correct enough. We see the following principal factors: (1) A short warming-up period at the beginning of the day and again after lunch. (2) A fairly long period of maximum productivity, a little longer in the morning than in the afternoon. (3) Onset of fatigue, where productivity begins to drop. (4) A state of complete fatigue, where a muscle is so tired that it cannot move at all, or, to state it more practically, where it cannot continue the work demanded of it. This stage is rarely met, both because demands in most jobs do not call for continual work of such severe nature, and because most people rest or quit soon after output begins to drop. It is safe to say that rarely is complete fatigue reached except in athletic contests, mountaineering, military duties, or rescue operations, where a high degree of motivation keeps one going much longer than normally seems possible. (5) Occasionally one finds an end-spurt, like a runner sprinting at the end of the race, but actually one is more likely to encounter taper-

ing off as employees prepare to quit. This latter, of course, is not a fatigue effect. (6) The curves for morning and afternoon have the same features, except the one for the afternoon is accentuated in almost all particulars, especially the shorter period of maximum productivity and the more rapid decline of output. The lunch hour does not permit as much recovery as is achieved during the evening and more particularly during sleep.

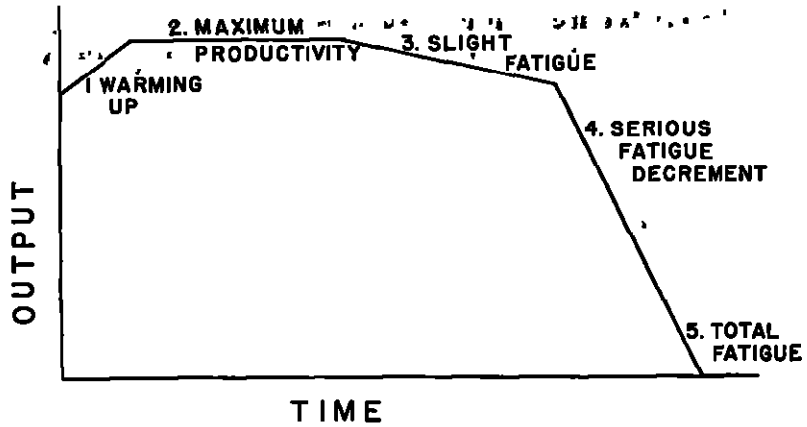

FIG. 22. Generalized Work Curve.

Recovery from Fatigue

Recovery from fatigue is almost solely dependent upon rest. If the rate of work is slow enough, there will be no decrement even in the last hour of the working day. Definite rest periods, say five minutes every half hour, allow restoration. It is essential to place such rest periods that they occur before one gets far down the curve of fatigue, preferably while one is still at his maximum productivity level.

Mental Fatigue

Mental fatigue is frequently spoken of as if it were similar to physical tiring. Actually, the nerve fiber is almost indefatigable. Continued stimulation of an isolated nerve fails, even after hours or days, to show decreased conductivity, although a muscle under the same conditions goes through the typical fatigue curve just

described. Furthermore, experiments have proved that if the subject is sufficiently motivated, he can keep up very intense mental activity, such as continuous mental calculation of complex arithmetical problems (6749×3852 done entirely in one's head) almost indefinitely. What is it, then, that leaves us exhausted after a hard day in the office or after a final course examination? It is undoubtedly the tension surrounding the work, as the nervousness of a salesman trying to land a large order, an executive making peace with a union, or a student writing an examination. Continued strain over several days may interfere with sleep and relaxation, so the person has become physically tired, and he may suffer muscular tension while continually forcing himself to concentrate on the subject matter. The conclusion, then, is that so-called mental fatigue is really an aspect of physiological fatigue. In this case, relief demands change more than rest as such, since it is harder to leave mental worries in the office than it is to abandon a muscular task. Change of activity may help here, if not too strenuous, say golf, bowling, or swimming, or cards, since one has to pay a certain amount of attention to these diversions.

E. Accidents and Fatigue

To say that fatigue is the sole cause of any accident is difficult, but indirect evidence that it is an appreciable cause is seen in the

TABLE 44 Total Numbers of Accidents by Hours of the Day (2)

7-8	3732	1-2	3914
8-9	4993	2-3	5646
9-10	6326	3-4	7184
10-11	7566	4-5	6533
11-12	7068	5-6	4834
12-1	2289		

data presented in Table 44 showing the relative frequencies of accidents at different hours of the day. They are more frequent in the late morning hours and again during the later half of the afternoon, and the total is greater in the afternoon than morning. While an accident may occur at any hour, the correspondence between fatigue and accident curves is so close that there can be no doubt as to a certain degree of causation.

F. Weekly Output Curves

Weekly output curves might show possible cumulative fatigue effects. Actually the trend is somewhat similar to that for hours during the day. Monday is a relatively poor day, as is the first hour of work each day. This may not be due so much to week-end effects as to the initiation of new projects at the beginning of the week. Tuesday through Thursday are best on the whole, with a slight decrease Friday, and usually a material decline on Saturday, although the half-day factor complicates this. The tendency toward a five-day week, and elimination of Sunday work whenever possible, should help provide more complete restoration to normal.

G. Length of Working Day and Working Week

A hundred years ago a 12-hour day and a 7-day week were common. Now a 40-hour week is standard, with some industries down to 35. Office schedules are commonly being shifted to five

TABLE 45. Relations Between Weekly Hours of Work and Speed of Production in a Box Factory

Hours Worked	*Weekly Output*	*Hourly Output*
36	29,926	834
40	34,737	868
44	36,920	839
48	38,100	794

8-hour days, instead of five slightly shorter days plus a half day Saturday. This practice can be commended on social as well as upon physiological and psychological grounds.

That a 40-hour week has justification is shown in Table 45. It is interesting to note that the 36-hour week showed a lower output per hour than 40, and about equal to 44. It may be that below a certain limit (not necessarily 40 in all cases, of course) too great a percentage of time is spent in unproductive activities—getting ready, securing tools and materials, transitions between tasks, etc. This gives rise to the suggestion that in slack times it might be more effective (even if not socially desirable) to keep a portion

of the whole force working full time rather than having all on part time.

A. Overtime

Overtime rarely pays in the long run. The costs rise with time-and-a-half rates, hourly production is lower, and there results more illness and other forms of absenteeism. These effects cannot be attributed solely to the added hours, since there usually is greater strain during the regular hours if production is such that overtime work is necessary, so the overtime may have been started with the worker more tired than ordinarily. On the other hand, occasional overtime, such as a store staying open Saturday evening, should produce no ill effects, especially if the day following is one of rest.

A British author (*6*), in reviewing the effects of large amounts of overtime associated with the war emergency, stated: "Among skilled workers who work over 70 hours per week and are well paid, there is a large incidence of acute neurasthenia with disturbances of attention, concentration, and memory; inability to make decisions; emotional lability; irritability. It is a state of acute exhaustion for which the prognosis is good (i.e., with rest, complete recovery will eventually occur; no permanent damage has been done.)"

Motivation from the importance of the work, one's responsibility in it, and the high wages earned cannot overcome these physiological effects, and the author urges that upper limits of performance be ascertained, since in the long run fatigue conditions will materially affect industrial production.

B. Night Work

Night work is also to be avoided when possible. The objections are on both physiological and social grounds. Man seems to be a daytime animal and can rarely make a complete transition to working at night and sleeping in the day. His sleeping, eating, and social habits must be completely reversed.

Production figures for night and day work show striking trends. Fig. 23 gives the hourly output of men drilling and reaming fuses in a munitions factory, and the production is seen to drop off almost to the vanishing point. The last hour is almost totally

unproductive. Actually, many men will be found asleep. Both fatigue and absence of top supervision are responsible. Sometimes, also, as in this case, the night shift covers more hours than the day

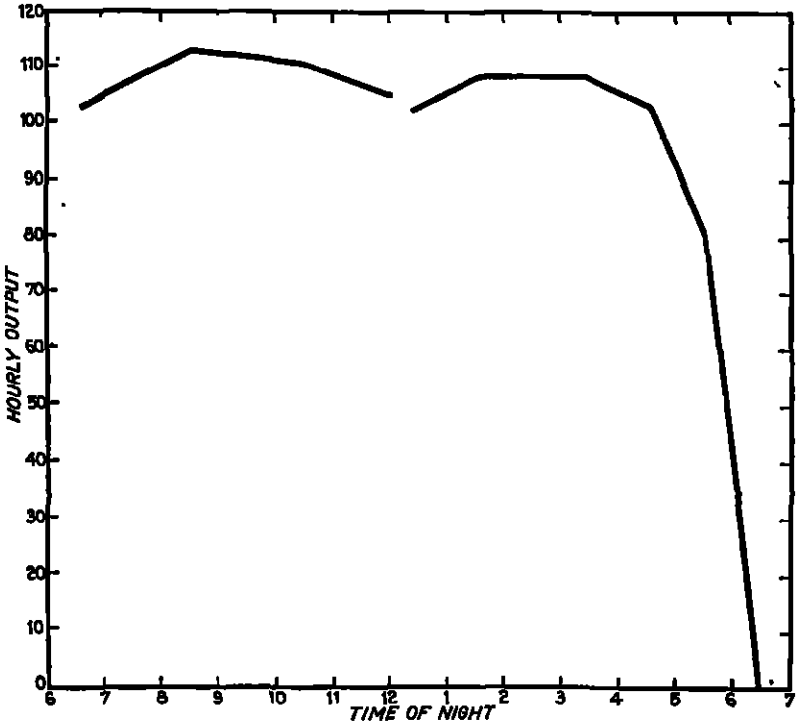

FIG. 23. Hourly Output, Night Work.

turn, but it is quite likely that if night work were not essentially harmful there would not be the extreme drop seen here.

Rotation of shifts brings up problems of its own. In the steel industry it is common practice to take each shift in rotation, making a three-weeks cycle of day (8 A.M. to 4 P.M.), evening (4 P.M. to *midnight*), and *night* (*midnight* to 8 A.M.) shifts. Physiologically it would be better to remain on each shift four to six weeks, as better adjustment of habits can occur, but custom seems to be stronger than scientific recommendations. Change of eating and sleeping

habits has to be made too frequently for successful adaptation to occur when schedules change each week.

Let us advance three suggestions: (1) Evening or night turns should not be any longer than day shifts. (2) If possible, shifts should be so scheduled that each gets its share of daylight, and also not disrupt retiring and rising hours too badly. (3) No single group of men should be kept continuously on night work.

J. Rest Pauses

We suggested in connection with the curve of fatigue that rest should be interpolated before the progress of fatigue becomes serious. It might even be preferable to insert it before the worker himself feels fatigue effects, say at a spot just prior to the beginning of decline.

A personal example will illustrate use of this principle. The writer and a companion were climbing a mountain which rose about 3500 feet in four miles. Some parts of the trail were very steep, and it was considered a rather stiff climb. Since neither of us had done any climbing lately, although we were in fair general condition, we decided to take it easy, and agreed to walk fifteen and rest five minutes. At the end of the first fifteen minutes we still felt fresh, but sat down nevertheless. This program was maintained all the way up, and we were surprised to reach the summit without feeling the slightest bit tired. In addition we found that we had consumed only an hour and a half, much faster than the usual time, and only twenty minutes slower than the fastest ascent on record. *Since we had rested twenty minutes in all, our walking time had equaled that of the record.* What had been lost at the beginning through resting had been more than made up through maintenance of speed during the second half of the ascent.

It is not implied that work and rest periods must universally follow this 15-5 ratio. The exact ratio depends on the severity of the work and on certain working conditions, notably temperature and humidity. Observations on industrial workers engaged in heavy work showed that rest periods are spontaneously taken at strikingly regular intervals, in the severest task every few minutes. with as much as 50 per cent of the total time devoted to rest.

The classic in this field is the original study in scientific management done by Taylor on pig-iron handlers in the Bethlehem Steel Company more than thirty years ago (*14*). The task studied was the crude one of loading by wheelbarrow 92-pound pig-iron bars into freight cars. Setting their own pace they averaged 12.5 tons a day. With a generous piece rate they tried harder, but became so tired early in the day that their afternoon output dropped to almost nothing. Trying various rigidly controlled schedules, Taylor found the optimum to be 42 per cent work and 58 per cent rest. Output soared to 47.5 tons, almost quadruple what had been loaded under a "go as you please" condition. This huge increase was made possible by forestalling fatigue before it developed to any marked extent.

Rest pauses are appropriate in light as well as heavy work. In one instance in comptometer operating (*10*) two short rest pauses were tried morning and afternoon, and it was found that unauthorized pauses dropped and total output increased. One who has supervised female employees knows that unauthorized pauses are difficult to control, as a trip to the rest room often develops into a lengthy smoking and conversational session—and the unfortunate male supervisor has no control or recourse!

K. Type of Rest

The type of rest is also of some importance. Random pauses, such as waiting for materials or for some other reason not controlled by oneself, are more likely to produce fatigue than rest, *because of tension, especially if on piece rate, and one cannot relax because he cannot predict when he may start working again. This* disposes of the argument sometimes heard that if work is interrupted from time to time, no further scheduled rests are necessary.

The benefits of stopping work are both physiological and psychological, the latter providing relaxation, freedom from tension and relief from monotony. In Table 46 are shown the economies produced on clerical jobs by various sorts of rest. All types of change are beneficial, but the value of the rest becomes greater as the activity and concentration demanded become less. Walking outdoors or playing cards might provide a change, but some effort or concentration is needed, and one is not relaxing completely.

TABLE 46. Economy of Different Types of Rest

Type	*% Saving*
Absolute rest	9.3
Uncontrolled	8.5
Music (listening)	3.9
Tea	3.4
Walk	1.5

It would be ideal if one could lie down, without talking or reading, and have a buzzer sound the end of the rest period so that one could relax completely without even having to think of the clock. This procedure has been tried successfully with football players. With uninterrupted clerical work done under some tension, such as tabulating, opening the windows and having brief setting-up exercises will relieve tense muscles. In this case there are no fatigue products to be considered, only the indirect tension fatigue.

2. Static Fatigue

Static fatigue is a unique type, caused by absence of movement, instead of because of it. Examples are standing many hours, having the back unsupported while typing, bending over a workbench or drawing table, or working in a cramped posture in a restricted space. Design or equipment can help—tables at right height, arrangement of filing cases to save excessive bending, or raising equipment. As one interesting example, the desk and chair of a girl who did typing and filing work were placed on a raised platform, *so that when she stepped from her desk to file she kept the height* of her shoulders constant, thus saving a great many foot-pounds of energy during the course of a day.

3. Atmospheric Factors

The several air variables: *temperature, humidity, ventilation,* and *altitude,* are so interrelated that they must be considered as different aspects of a single subject.

Seventy degrees is often recommended as the "ideal" temperature for homes and offices, and perhaps 65 degrees for medium work. Many working environments cannot be readily controlled.

In a steel mill an open hearth is hot in summer and cold and drafty in winter, and it is on such a huge scale that one can conceive of no way to alleviate the situation even fractionally. It would be ideal to control such environments where possible, not only for the physiological effects, but for morale as well.

Voluntarily taken rest pauses in a coal mine demonstrated the influence of temperature on fatigue. The surface was about 60 degrees, and the heat increased 13 degrees for each thousand feet of depth, producing in excess of 100° F. at some of the lower levels. It was observed that men working near the surface stopped about 7 minutes each hour, while those in high temperature levels rested as much as 22 minutes an hour.

High temperatures, separated from humidity, if possible, can be withstood remarkably. Temperatures near the 150 mark in steel mills, where the gas-fired furnaces vaporize moisture, are not anywhere near as uncomfortable as one might think, provided of course that one doesn't have to work too long without relief. Those who have been in desert regions, such as Arizona, know that even one unaccustomed to 120-degree heat has less risk of heat prostration than at 100 degrees near the seacoast or in a tropical jungle. There is one further angle to temperature. It has been said that one who is forced to live in the tropics might do so indefinitely if he could get a satisfactory night's sleep, say by air conditioning if the climate did not cooperate by cooling off after sunset.

A number of experiments were conducted during the war period on the effects of temperature and humidity, presumably with reference to tropical and jungle warfare. In one test, men were kept from one to four weeks in an artificially produced jungle environment, temperature 87-93, humidity 80-96 per cent. They walked the equivalent of 12.5 miles a day, carrying a 20-pound pack. Adaptation appeared at an average of eleven days, when the men could work as long and with as little discomfort as in a temperate climate (*12*).

A second experiment tried even more drastic extremes of temperature and humidities, with dry-bulb temperatures of 93-121, and wet-bulb readings of 90-96. Wet-bulb figures were the more crucial; the dry-bulb readings were minor. As one approaches the limit of endurance, a range of just four or five degrees makes the

difference between easy work and impossibility. At and above 94 total disability was produced, with excessive physiological changes, whereas at 91 men could work easily and efficiently. Between these two narrow limits efficiency was maintained fairly well, but with difficulty, and men lost vigor and alertness, and ran the risk of becoming minor heat casualties. At the upper limits they sweated as much as 3.5 liters (about four quarts) per hour (*4*).

Since work must be done during the summer, in all climates on earth, and some industries are unavoidably heat producing in their operations, the control of one's physiological balance is essential. Merely taking in water as one becomes thirsty is inadequate. Water loss may become severe, and produce inefficiency, long before one realizes his lack. Thirst only prompts one to drink about two thirds the amount he sweats out. Salt tablets are widely used in industry, and beneficially, although it has been stated that if adequate amounts are taken with meals there is no need to supplement further (*13*).

Ventilation has as its crucial factor the circulation of air, rather than necessarily its freshness. It is ideal to take in outside air, but it is sometimes impossible or impractical, as in a movie theater during a daytime show, a deep mine, or in the presence of chemical vapors. In a theater, the most common of these, the high ceilings provide plenty of unused air, if proper circulation brings it to the audience. Furthermore, fresh air is constantly leaking in through cracks, doorways, windows, and even through bricks and plaster. Ventilation is a factor in controlling humidity, in that circulating air will assist evaporation of moisture from the skin surface, providing both normal physiological interchange and personal comfort.

Altitude has been simulated in laboratory tests for aviation selection and design of equipment, as well as observed in mountain-climbing expeditions. With persons in sound health, 10,000 feet produces no appreciable loss of efficiency, although adaptation raises endurance, as in one who has lived in a mountain region months or years. At 18,000 feet nausea, headache, cyanosis, somnolescence, visual disturbances, and palpitation are described, and

their effects are such that restoration to sea-level air pressure does not provide complete recovery for as long as thirty minutes. Sleep disturbances are noted in mountain climbers above 20,000 feet.

Extreme cold is more physiological than psychological, and not much experimental work has been conducted. At present the Army is conducting such research in Alaska, to test equipment and men in temperatures as much as 70 below zero. Three typical problems are: (1) foods which will provide as much body heat as possible, fats and carbohydrates principally; (2) maintenance of deep body temperature (as contrasted with mere skin temperature); and (3) the design of clothing so that heat loss will be reduced but without so much bulk that work cannot be conducted effectively.

Visual Factors

We discussed vision in connection with employment. Different visual tasks can be classed into six types: those calling for normal vision, close work, endurance, distance judgment, judgment of moving objects, and color discrimination. Some of these can be helped with ordinary glasses, microscopes, or colored glasses to guard against glare or arcs. Also shatterproof lenses will furnish protection against flying particles. There is little that can be done for judgment of distance or fatiguing tasks.

Very close work produces a great deal of eyestrain from the constant accommodation and convergence in working on material close to the eyes. Special glasses, to be worn during working hours only, permit the material to be held close and to be magnified, yet one's eyes remain in a normal resting position. In one job, girls who sorted and mounted filaments for electric lamps were able to raise their production as much as 20 per cent by use of such glasses.

Arrangement of work to narrow the range of area to be covered by vision has been suggested by Tiffin (*15*, p. 158): "Visual factors in job operations can often be eliminated. Where they cannot be eliminated altogether, sometimes simpler visual functions can be substituted for more complex ones. Jigs and fixtures for positioning tools and materials help to reduce visual operations to a minimum. . . . In general, the visual operations on any job should

be organized into a restricted area at a convenient and fairly uniform distance from the eyes."

Problems of the proper amount of illumination and the control of glare are both so technical and so highly specific to the situation that we can do no more than suggest problems here.

It should be pointed out that what may be excellent lighting for short periods may not be the best for full days, full weeks, month after month. Fluorescent lighting has enjoyed great popularity, but many workers complain about its constant use. The brilliance of an operating room may be ideal for surgery, but one would not wish it in his office or living room. The eye can adapt to a tremendous range of intensities, from reading on the front porch at twilight or even under a full moon, to adaptation of the iris and retina to the dazzling noontime sun or a searchlight. It is said that this range of intensities is several million to one. Yet no one could endure these extremes indefinitely.

Ideal lighting should be shadow-free. It is preferable to have quite a number of sources of light shining from all angles (except of course directly into the eyes) than to have a few very bright sources. An indirect control is to avoid by means of dull paints or slightly roughened surfaces reflections which not only dazzle, but produce fatigue, headache, and eye trouble. White or light-colored paint, avoidance of dark woodwork in offices, admitting all possible daylight illumination, and even frequent washing of the windows near dirty industrial operations, all have objective and subjective effects on workers' efficiency and contentment. The writer can witness the subjective factor, having worked for several years in a location which demanded artificial lighting all day, summer as well as winter. From an engineering standpoint the lighting may have been considered excellent, but in the long run both feelings and eyes suffered.

Illumination is important in safety as well as in production and morale. Dangerous and moving parts may be painted bright yellow as warning signals. Stairways are painted white, and have adequate artificial illumination, especially in places where one enters from outdoors and cannot adapt to lesser intensities immediately. Adequate illumination will prevent one's running into dangers he cannot see.

Auditory Factors

Noise is a source of both distraction and fatigue. Studies on this topic are few, because in industry there are always other factors present, and in laboratory tests the subjects are too self-conscious to make their efforts natural. One test measured the energy, through expenditure of oxygen, consumed by working in a noisy room, and found that whereas typing in a quiet room required 51 per cent more oxygen than resting, working in a noisy room consumed 71 per cent more energy. Production, therefore, may remain the same, but the achievement in the face of noise is costly in human energy.

Laboratory tests suffer the same shortcomings, in that crude results must be qualified in the face of temporary compensation through the additional motivation "to show them it doesn't bother me," and the short-time nature of any laboratory test—or for that matter of any industrial survey, unless the workers do not know that a study is being made.

Certainly there is no advantage in noise. It is being eliminated by using noiseless typewriters, quieter calculating machines, lights instead of buzzers for communication, special materials in ceilings and walls to absorb echoes, rubber-tired rollers, and similar devices. *Occupational deafness* occurs in boiler shops, airplane operations, and in places where there are continual loud sounds of constant pitch. Even with extreme loudness it is lessened if the sounds are intermittent and variable. Fortunately, also, this occupational deafness usually affects only a part of the total pitch range, and that usually at a level above most speaking voices. Further, it is usually temporary, and recovery will take place in a few days after the worker lays off or is transferred to another location.

Music in industry is as yet in its infancy, but its use is growing slowly, and it seems likely to prove more than a fad. At present it is used principally in rooms where routine operations of not too noisy character are going on. It has been placed in such locations as tabulating rooms in telephone offices and banks, typists' offices, and assembly and inspection rooms of small-parts factories. It is used principally as a morale builder, to keep employees contented and from getting bored. It is not claimed to increase production

to any material extent, at least at the moment. The long-run effects may be another matter; it is possible that a good rate is kept up, without diminution over a period of time.

The usual use of music involves several general principles: (1) It is not to be used continuously; the recommended practice is four half-hour periods daily—the first soon after work begins, another about 11 A.M., one say from 2 to 2:30 P.M., and finally one around 4 P.M. (2) Music alone is used—no vocals. (3) The best type is background music—light classical selections, e.g., Victor Herbert. (4) Speed and volume should be roughly even—no highly rhythmical pieces, bombast, nor faint passages. This factor can be partially controlled with a rheostat in the transmitting equipment. The equipment, by the way, can be used for news broadcasts, baseball scores or world series, important company announcements, or birthday greetings.

Surveys of musical programs show that employees are almost unanimously in favor of it. A few may be indifferent, but only rarely is one definitely opposed. Observations of people working show no evidence of distraction, lowered output, or increased errors. In fact in one study of radio-tube assemblers the women had a lower scrappage rate with music than without it. A British study showed from 3 to 6 per cent increase in output in simple repetitive tasks. This slight increase is typical. No report has shown a decrease, although it must be realized that such might not be published (*7, 8, 9*).

Music in industry is not adapted to most manufacturing scenes, especially where workers must move about a good deal and where there is a good deal of noise. Nor is it suitable for offices where creative effort is demanded. We may conclude, therefore, that music is most suited for routine clerical operations, played for brief times at several well-chosen times a day, and composed of fairly quiet and soothing pieces. The effect is primarily upon morale and fatigue, rather than upon productive efficiency.

Monotony

A Problem

With increased specialization in industry, work has become repetitive to a high degree, and therefore monotonous. Man can-

not derive the satisfaction from his work that comes from a variety of tasks, and from pursuing a job from beginning to end. As we have observed before, in many cases what appears to be fatigue toward the end of the day actually is a drop in effort due to sheer monotony. Another evidence of monotony is increased variability, showing waves of concentration and inattention.

B. Susceptibility to Monotony

Are all workers equally susceptible to monotony? Is it possible that the worry about boredom may exist principally in the minds of executives or labor leaders of higher intelligence levels, and that the majority of workers are not affected? Case studies of employees show that there are four principal types of workers in this respect: those who genuinely suffer in a monotonous task; some who are able to daydream while performing repetitive work (one craneman said he had planned and dug up half a dozen gardens in one 8-hour shift); some who actually enjoy monotony, perhaps because it relieves them of having to think; and finally some who are too dull to be affected.

C. Relief from Monotony

It is possible that the best control is though selection of workers in accordance with intelligence and personality. It has been brought out before that an ideal intelligence level is one which permits the worker to understand his work, but no more—just enough aptitude so that the work calls for all his talents. On the personality side, all of us know persons who are self-reliant and like to take the initiative, and others who dislike to make even minor decisions on their own. Women in general are not as much in the habit of making decisions, and they also complain less about monotonous work than men. It has been suggested that for tasks recognized as unpleasant and monotonous an annoyance test, such as Cason's (3), might be used in hiring, to detect workers who might find especially distasteful such positions as garbage-collector, miner, fisherman, watchman at an isolated crossing, etc. The applicability of this suggestion depends to quite an extent upon the validity of ascertaining dislikes from abstract questions.

4. Jobs may be changed from time to time, especially on such repetitive work as assembly lines, where time to learn a new job is not long or where production loss is minimal. Worker preference may be against this; one automobile manufacturer whose factories are noted for their extreme mechanization proposed regular shifting, and received more protests than commendations. But such transfer, if feasible, and acceptable, will make employees more versatile, and hence of more value to themselves and the firm.

Over a shorter time, work may be changed several times in one day. This has been tested, and no deleterious effects occurred. In fact in one instance (*17*, p. 551) output actually increased slightly, and boredom was much reduced.

5. Rest pauses will relieve monotony during the day, and weekends and vacations will provide longer breaks.

6. Motivation in the form of piece-rate pay may help relieve monotony caused by endless work at the same hourly rate. Individual skill will be rewarded.

7. Avoid engulfing the employee with a mountain of work. If he can see himself making progress, as in mowing a lawn one small square at a time, he will have less tendency to lapse into the doldrums.

8. An indirect way of making the job more desirable—or perhaps we should say less undesirable—is to improve the general atmosphere in and out of work. Employees' clubs, athletic teams, library facilities, recreation rooms for lunch-hour relaxation, night classes, etc., will make life outside of work more pleasant and complete, even though the work itself is not changed appreciably.

Supervision

The human element in working surroundings is as important a condition of work, and perhaps more important, than any of the more mechanical conditions we have described so far in this chapter. The best working conditions in the world will only be vitiated if the foreman and other immediate supervisors do not treat one as a human being, with feelings and desires much like their own. On the other hand, with fine human elements—principally supervision and fellow workers—such unfavorable things as extremes of heat or cold, dust or fumes in the air, underground

or exposed locations, will diminish in importance, whereas they will be magnified if supervision is unfair.

As with several other topics which we wish we could discuss in full detail, whole volumes have been written on the principles of supervision. The interested reader would do well to read one or more of these (*5, 11*). The subject is not technical, and much common sense is involved, but the new supervisor will find many useful hints in these writings, and will have points called to his attention which might not otherwise occur to him.

To summarize the majority of important angles of the human side of supervision we present the following rather lengthy outline which is a compilation of principles suggested by a variety of authorities on this subject. It is really a generalized position description of a supervisor. The points need little amplification, but it is suggested that the list be read and reread slowly and carefully.

TABLE 47. Characteristics of the Good Leader

A. *Giving Orders and Supervising*

1. Issues clear, understandable orders, not too many at one time. Is willing to amplify or repeat. Explains if necessary why the action is being taken.
2. Plans systematically.
3. Is orderly in his plans and instructions.
4. Delegates responsibilities advisedly, and grants commensurate authority to enable the person to discharge his duties.
5. Is fair and impartial; does not play favorites.
6. Checks on progress of assignments from time to time; does not issue orders and forget the job.
7. Is on the job at all times—mentally, and not merely physically.

B. *Attitude Toward His Company*

8. Is loyal toward his organization, his superiors, and his subordinates. Defends them and supports them.
9. Is thoroughly familiar with company policies, procedures, and practices.
10. Follows proper lines of authority.
11. Abides by the rules he lays down and enforces on others. He makes no exception of himself in rules of company or department—smoking, safety, hours of work, conduct.
12. Makes positive efforts to get along with other supervisors and with other departments, to gain full cooperation with them.

TABLE 47. Characteristics of the Good Leader (*Cont.*)

B. *Attitude Toward His Company (Cont.)*

13. Keeps up on new and changed job contents and practices; supervision demands full knowledge of what is being supervised.
14. Works for quality as well as quantity of product; takes pride in work his group turns out.

C. *Handling Humans*

15. Assigns men to work suitable to their aptitudes and interests, both as to steady positions and single assignments.
16. Recognizes that each person under him is different in ability, background, and temperament.
17. Treats others in all ways as he would like them to treat him if the situations were reversed.
18. Evaluates things in proper proportions, and does not haggle about minor matters.
19. Is kind, possesses patience and forgiveness, uses courtesy and diplomacy, and is above petty dealings.
20. Does not resort to sarcasm, profanity, petty criticism, gossip, or snooping.
21. Possesses a well-balanced sense of humor.
22. Is friendly, but not too intimate, and does not play favorites.
23. Does not censure workers in the presence of others.
24. Uses judicious praise, and at least as often as censure.
25. Encourages worker's pride in his work.
26. Takes honest pride in accomplishments of subordinates.
27. Never takes credit for an idea or suggestion which is properly that of a subordinate.

D. *Training and Instructing*

28. Takes special pains to introduce new workers to their department, their work, and their fellow workers; and to see that they are properly trained and made effective and loyal members of the organization.
29. Makes any necessary corrections in methods or habits of work early in the course of the assignment.
30. Trains men under him to progress, including at least one who can step into his shoes should need arise. (This will also facilitate his own progress.)
31. Instructs and works constantly for safety.

TABLE 47. Characteristics of the Good Leader (*Cont*)

E. *Discipline*

32 Administers discipline fairly and consistently.

33 Puts a firm, but courteous and polite, stop to any undesirable practices which show signs of getting out of hand

34 Has courage of his convictions in his decisions, especially those of discipline Weakness will undermine his entire power of authority and discipline

35 Does not criticize subordinates when the situation has not been under their control, especially when it is his own fault, say in having made an unwise decision or given unclear orders

F *Grievances*

36 Anticipates problems and difficulties before they arise, attempts to forestall them, or to straighten them out before they become serious

37 Is consistent and fair in his handling of grievances

38 Handles complaints, grievances, and suggestions promptly. Is available to all his men for consultation about work or personal affairs at all times—the "open door policy"

G *Self Discipline*

39 Analyzes himself constantly to see if he is doing all he should, and is making progress

40. Grows in his job; is not stagnant

38 Must be flexible and willing to change

39 Welcomes suggestions from both superiors and subordinates, does not feel that an idea from someone else minimizes his own importance Does not discourage initiative

43 Modest, not overbearing or high hat.

44 Has self control and an even temper Keeps cheerful and avoids showing a grouch

45 Thinks before he acts

46. Is consistent and dependable.

47. Is willing to take on extra work in an emergency without complaint, ungrudgingly assuming that such is part of his job

48. Does not procrastinate Prepares in advance, does not have to rush at the last minute to get things done.

49. Shows persistence to gain a goal, and does not give up easily.

50 Devotes his primary energies to his principal job.

51 Never passes the buck, admits his own mistakes.

TABLE 47. Characteristics of the Good Leader (*Cont.*)

H. *Personal Conduct*

52. Uses common sense, alertness, resourcefulness, and has a good memory for what he has done, as well as a convenient "forgettory" for what is just as well dropped.

53. Must be absolutely honest and sincere. A square shooter.

54. Is consistent and dependable; impartial.

55. Sets an example by his own attitudes and behavior of which his men and his company can be proud.

56. Should radiate enthusiasm.

57. Must be confident of self and his group, to build up their confidence in their ability to handle assignments. Optimistic concerning other people.

58. Must be capable of making his own decisions, within the limits of his defined authority, and having confidence in these decisions.

59. Must keep himself in physical condition to handle the normal and emergency duties of his job.

60. Presents a personal appearance commensurate with the importance of his position and with what others expect.

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CHAPTER XVIII

SCIENTIFIC MANAGEMENT

I. Major Principles

Scientific management has been thought of variously as something mysterious, something strictly engineering in character, or as a system to exploit the worker, as well as in its true significance. Its actual purpose is to reduce the great waste of time, effort, materials, and overhead expense which occur under traditional systems of industrial organization and conduct.

Scientific management is nothing more than the application of scientifically ascertained principles to human factors in work. In the last chapter we discussed one of these factors, without precisely labeling it as such, when we studied work and rest periods.

The first thing of which one tends to think when scientific management is mentioned is the assembly line, which in popular imagination stands for the extreme of mechanization in industry, and represents to critics the maximum of exploitation of the worker and the minimum of gratification of work satisfaction. Its adherents will challenge one to prove that anything is lost, and will point out many gains achieved by the assembly line. The assembly system consists of two principal features: bringing the work to the worker; and through this, specialization of work. Suppose we took the opposite extreme, where a worker assembled by himself a whole car or a radio. The working floor would have to be one gigantic stockroom, and much of the worker's time would be spent going after tools and parts. Not being a specialist, and having to put together all components, wood, metals, electrical parts, fabrics, rubber, he would be much less efficient.

Taylor, regarded as the founder of scientific management, specified at least seven major principles, which one can see are very straightforward and far from obscure or magical.

1. The *method of scientific management is nothing more than the application* of scientific methods to industrial problems, substituting these for rule of thumb and traditional methods.
2. *Industrial processes are reduced to units, then scientific observation* and experiment are made, time study being the most important of these.
3. Standard times, in which a given operation is to be performed, are laid down.
4. Scientific selection is practiced in regard to machines, materials, and workers.
5. (a) The worker must be instructed how to achieve this standard.
   (b) Training on the job is continuous; the worker is continually instructed in the most efficient methods to produce with the greatest skill.
   (c) Supervision thus becomes predominantly instructional rather than overseeing in function.
6. Experts do the planning and routing; the worker does not perform these functions, but is able to devote all his energies to actual production.
7. The worker is motivated to accept these new methods by a differential, or incentive, wage system, wherein he is rewarded in terms of his own capabilities, and shares in the increased productivity.

Advocates of scientific management have repeatedly demonstrated with statistics as their tools of proof that there have been achieved *greater productivity, greater profits, higher wages, and reduced prices to the consumer.* If these claims be true, there should be no serious objection left, since all parties—management, owners, stockholders, employees, and the public are benefited.

In the next few sections we shall discuss some of the major angles of scientific management, emphasizing the influence on the task and the worker, and minimizing the strictly engineering procedures.

II. Planning the Work

The first task of scientific management is to plan all work in *detail in advance. Thus there are eliminated lost time and con*fusion which occur before men are assigned to their proper work,

machines are kept busy a greater proportion of the time, work is done in the proper order, and things as a whole are conducted efficiently. Each man is kept busy all the time, and there will be less waiting between jobs, and less waste in having too few men in one place and too many in another.

Each task is planned in detail, as to time of starting and finishing, tools and materials necessary are prescribed, and blue prints and instructions are furnished. Standards of quality and quantity are specified, to indicate what is expected on each job and to furnish an incentive for performance. Usually the worker is paid piece or tonnage rate, so wages as well as job tenure depend on one's making out.

It has been objected that such minute planning of the work, with detailed daily assignments for each man for each job, will add greatly to the cost of management. It is true that a phase of management heretofore carried on casually by the individual foreman will require additional staff, but, like a good medical program, it should more than pay for itself in the long run.

III. Tools and Machinery

Proper design, upkeep, and placement of tools and machinery are necessary for the highest type of efficiency. Let us turn our attention briefly to those features which pertain to the human side rather than to strictly engineering matters.

It is of great significance that an increasing number of plants fit tools and equipment to the worker rather than make the worker conform to standardized sizes. It is interesting to note that athletic equipment is usually much more carefully fitted to the user than are the tools by which he earns his living. He chooses his tennis racket by weight, balance, and circumference of handle; his bowling ball by weight and separation of finger holes, and his baseball bat by length, weight, and size of grip. Why then expect a new worker to use the same tools and machines as his predecessor on the job?

Taylor raised the question as to whether a man can do more total work with a shovel load of 5, 10, 15, and so on up to 40 pounds. The larger shovel will lift more with each scoop, but one

will become tired more quickly. What is the best compromise? He found that 21 pounds was an ideal load *for the average worker;* 24 pounds tired him too quickly, and 18 produced too few shovels full in the course of the day. On this basis different-sized shovels should be provided for coal, coke, sand, iron ore, and other materials of widely differing weights per cubic foot. Furthermore, length of handle and size of scoop should differ for the individual worker.

Height of desk, workbench, or machine will reduce static fatigue (see page 388) and enable greater daily output. A bricklayer, for example, worked best when his bricks and mortar could be taken from a platform two feet high. Foot pedals should be so located that they are pressed with the person as close to a normal standing position as possible; otherwise he will have to stand on one leg and reach uncomfortably with the other.

Other mechanical means of saving energy are listed below (*3*):

1. Install gravity delivery chutes.
2. Use drop delivery.
3. Compare methods if more than one operator is working on same job.
4. Provide correct chair for operator.
5. Improve jigs and fixtures by providing ejectors, quick-acting clamps, etc.
6. Use foot-operated mechanisms.
7. Arrange for two-handed operation.
8. Arrange tools and parts within normal working area.
9. Plan layout to eliminate backtracking.

The question of design of a smaller machine has been raised more than once in the case of the typewriter. The location of letters on the keyboard is fixed and traditional, and however it may have been worked out in the beginning the arrangement definitely is not on the basis of the numbers of strokes to be made by the stronger fingers. Two of the most frequently used letters ("a" and "s") are struck with the last two fingers, and some fingers have to do several times the work others do. It is probable that typing speed would be materially raised and no question that fatigue

would be reduced with a better layout, but such a step would render obsolete millions of dollars' worth of equipment, so it is unlikely that we will ever see a new keyboard.

Gilbreth gives some interesting suggestions about caring for bricklaying materials in cold weather. The bricks, and water and sand making up the mortar, are heated. The warm bricks keep the worker's hands warm, so he does not have to wear gloves which would make his movements clumsy. Previously work was discontinued or went along inefficiently during the winter.

Finally, as a matter of mechanical efficiency, machines must be kept in the best running order all the time. Constant inspection, lubrication, adjustment, and early replacement of worn parts will prevent breakdown and make machines last longer. Most important of all, this will prevent waste of time while workers are idle as repairs go on.

IV. Routing

If specialization is to be practiced—that is, if one worker is not to carry the task through from beginning to end—there must be careful coordination among the successive steps in the process. If one man is not able to do his part of the work because of lack of materials or because the previous step is done slowly, not only does he suffer, but everyone along the line following him is also delayed.

Henry Ford, an early efficiency expert, thus stated the essence of routing materials: "The thing is to keep everything in motion and *take the work to the man and not the man to the work.*" This suggests the assembly line or belt conveyor. These devices are useful not only in assembling large objects, like radios, refrigerators, or automobiles, but for smaller items and for inspecting as well. Boxes of breakfast foods are transported along conveyors. Bottled goods are transported from one process to another for filling, capping, labeling, applying state and federal tax stamps, and cartoning. A modification of this method has been used in a shoe factory, where a worker may carry on several processes, so he picks up a partly finished shoe from a roller, performs his operations, and tosses the shoe into another roller. But the materials are brought to him, and taken from him to the next skilled worker

by a lesser-paid person, so highly skilled time is not wasted in routine work.

Routing calls for delicate and intricate timing, so that one man is not overburdened while another is only half occupied. The right number of workers and machines must be provided, and materials must be delivered at the right place and right time. Proper speeds must be figured. Even plant layouts are designed to make most effective use of human time. With certain processes one worker can manage two or more machines, provided placement and timing are effective. One must survey, in effecting such planning, the fundamental purposes of the operation, the various operations, inspectional requirements, materials and their handling, tools and equipment used, and working conditions.

V. Motion Study

Another very important problem is that of going about the task in the most efficient way. The worker should be taught to use the easiest, most direct, and most rapid motions.

Frank Gilbreth has been identified with work along this line more than anyone else, since he started work in this field and carried on a good many experiments. His study of bricklaying (2) is a classic. A bricklayer himself, he observed that even expert bricklayers were far from alike in their methods of going about their tasks. Each had his own individual methods, and furthermore varied his motions from time to time. Most of the men used one series of movements when they were in a hurry, a second when there was no particular rush, and perhaps still a third when instructing novices. One crucial observation, however, was that the fastest men used the fewest number of motions.

In attempting to improve the methods of going about the task Gilbreth made two fundamental assumptions: (1) that there is just *one best way* of performing a skilled muscular task; hence any other procedure is inferior; and (2) that all workers are capable of learning this one best way.

Skilled tasks must naturally be studied in detail before one can set about improving techniques. This may be done by: (1) direct observation and stop-watch timing, (2) recording motions on a photographic plate by means of a small flashlight bulb on the

back of the hand, or (3) by means of high-speed movies. The latter gives the best records, since they can be studied over and over again at leisure, and since the time relationships are disclosed in the successive frames. They are however expensive and laborious to interpret.

Ways in which motions were simplified, with examples of each, are listed in Table 48.

TABLE 48. Means of Simplifying Bricklaying Techniques

1. Omission:
   - A. Dropping superfluous movements, such as tapping down brick after laying.
   - B. More accurate working methods. Spreading mortar correctly, so it does not need to be trimmed.
   - C. Appropriate placing of materials. Stepping for mortar or brick eliminated by having them placed close to worker and at right height.
   - D. Materials provided in proper condition. Perfect bricks and mortar in right condition are supplied, so selection and working up are unnecessary.
2. Shortening movements which cannot be eliminated. Mortar is cut off every second brick, not after each one. Mortar is carried from staging to wall in straightest possible line and with an even speed, without pause or hitch.
3. Combination of several movements. Brick is carried with left hand (unskilled motion) at same time mortar is carried and spread with trowel (skilled motion) with right hand, rather than one motion following the other.

Gilbreth counted 18 movements in a typical bricklaying sequence. By application of his system he cut this down to four and a half (the half motion being cutting off mortar every second brick). Gone were flourishes, useless steps, reaching for materials, inefficient motions of "playing with" brick and mortar, and rectifications of poorly done work. Even those steps which are essential and must remain are subjected to scrutiny, with the result that some are simplified, and others combined. Application of Gilbreth's methods also enabled a tripling of numbers of bricks laid per hour.

The training of apprentices is of extreme importance in the field of motion study. Here are several important recommendations:

1. The beginner must do a full day's work from the outset.
2. He should work with standard tools and materials—not lightweight or miniature.
3. The apprentice uses the correct motions and goes at full speed right from the start. (This point has been argued fiercely, may be true with some operations, but has been shown not to be suitable for learning typing.)
4. Both hands are used simultaneously. If possible the movements are to be paired and identical (mirror images).
5. He should pass from one movement to another smoothly, gracefully, and rhythmically.
6. Continuous movements should be used, in smooth curves or circles, instead of jerky, straight, or angular motions.
7. A stroke (as in chopping or using pickax) is delivered at an accelerating tempo.

We have been discussing motion study primarily from the standpoint of bricklaying. This was done because it was Gilbreth's first study, a standard in the field, and is a well-known operation. Many other occupations and tasks have been subjected to time and motion study. More than a dozen samples follow:

Arc welding
Assembling detonation charges
Cheese-wrapping
Core-making
Crane operation
Drilling
Electrical-equipment assembly
Enamel sprayers
Flat-bar grinding
Garter manufacturing
Gear cutting
Milling-machine work
Piano assembly

Pipe fitting
Processing steel sheets
Railway and streetcar repairing
Stamping and punch-press machine operating
Thread grinding

Not quite as precise as motion study, the planning of work of somewhat less repetitive and predictable nature to make it more systematic and standardized is seen in such titles of articles as "Janitors on Schedule" and "Holding the Stop Watch on Salesmen."

It will be observed that time and motion study has been applied particularly to two types of operations: assembly, and processing work of machine-shop character. It is by its fundamental nature applicable principally to repetitive tasks which are routine enough in nature so that the worker rarely has to make independent decisions or to depart from specifications. It might, however, be applicable to such diverse tasks as greasing a car, performing an appendectomy, shining shoes, washing dishes, or cutting hair: The more rapidly, routine, and identically such tasks are done the better.

VI. Financial Incentives

The incentive value of wages determines not only whether or not a man will work, but how hard he will work. Pieces he turns out beyond a certain minimal number will be at progressively lower cost to management, so will contribute that much profit to the firm, and the employee should be rewarded for such.

Pay, whether for factory work, selling, or supervision, can be either for time put in or for production turned out, or a combination of the two. One survey (7) showed that only 8 per cent of nearly a million wage earners in 1200 plants were on a straight time (hourly or weekly) basis, while the rest were on piece, tonnage, or other form of incentive. Estimates for occupations at large are not available. Professional men whose fees are received from clients, storekeepers, insurance men, and many salesmen are on straight incentive bases, while teachers, public servants, and salesmen in smaller stores are usually on straight salaries. The

middle income or "white-collar" class likewise is as a rule on monthly salary.

1. *Pay by the hour, week, or month* assumes that an employee will work satisfactorily without variable income as motivation. It has as principal shortcoming the fact that the marginal employee (one who barely escapes discharge) earns as much as the best producer, although we saw under Job Evaluation that a range may be installed, but that this range is usually rather limited. Salaries may reward individual merit to some extent, say in salesmen, executives, athletes, or teachers. Furthermore, the hope of promotion furnishes motivation for quality of performance.

Advantages of straight salary systems are that earnings will not be subject to change due to conditions beyond the worker's control, such as seasonal fluctuations, industrial depressions or peaks, or factory breakdown. The worker has more feeling of security in having a predictable income, and has less constant strain in his work from not having to make quotas.

2. *Straight piece or tonnage rate, or commission system* compensates in exact proportion to output. A conscientious and talented worker will not have to share the fruits of his labors with loafers, nor will a mediocre employee be a parasite on society. Workers will share in the larger profits of good times, and will be able to earn something even in slack times, rather than be laid off entirely. Promotion is taken care of in a sense, since as one increases in skill he earns progressively more and more. It must be pointed out that one of inadequate abilities or one who does not care to exert himself is not necessarily guaranteed his job, as he must earn at least his overhead to warrant his retention even on a straight incentive system. Conversely the better he is, the less overhead has to be charged to each unit of production.

3. *Group commissions* are given in some cases where a number of persons work as a team, and where individual bonuses would be unfair. Salesmen in one department in a store assist each other; one may close a sale where the credit really belongs to another who interviewed the customer at time of first contact, and there may be a good deal of luck as to which clerk the customer happened to contact first. The writer has participated in a group commission, and from experience can say that given an ambi-

tious group the spirit and morale is improved, and there is more cooperation, less customer grabbing and hard feelings than when the individual incentive system prevailed. Likewise, many industrial production situations depend more on teamwork than on individual initiative, so all should share equally.

4. *Scaled piece rate:* rather than pay on the basis of a fixed sum per unit, the rate rises progressively higher as each of several progressively higher totals is reached. An example is a commission of 1 per cent on sales up to $1000 a week, 2 per cent of sales between $1000 and $1999, and 3 per cent of all sales over $2000. Similar applications may be made to tonnages in heavy-metal production, pieces produced in a machine shop, items inspected, or shirts ironed in a laundry. Supervisors, even up to presidents of corporations, often receive as a bonus a share in the profits of departments or plants under their direction.

5. *Salary plus incentive* rates combine some of the advantages of both major schemes, giving a fairly steady income, yet compensating individual merit.

6. *Minimum earnings* may be guaranteed, so employees do not suffer so much in time of slack production, and pay will go on if factory breakdown occurs. A number of companies on incentive systems reported that they place employees on a specified hourly rate if production is interrupted through no fault of the employee, such as breakdown, shortage of materials, power failure, etc.

Piece-rate systems have several limitations and disadvantages, regardless of which phase of them may be used. If work is highly varied in character, arranging and computing will be difficult. If production is highly mechanized, individual differences will be entirely eliminated, and an incentive basis will be inapplicable. Fear of rate cutting, discussed before, is often heard, but this is not an inherent defect in incentive systems as such, but in the manner in which they are administered. An adverse effect on quality of product has been encountered, since the worker is strongly motivated to produce all possible quantity. Then he becomes suspicious of and antagonistic toward inspectors, and may even accuse management of deceiving him as to how many rejected items there may have been.

The manner of installation of rates is a purely psychological

matter, and one to which careful attention should be paid. The move should be well publicized in advance, made intelligible to the employee, and discussed with the union. Rates must have a factual basis, and one which can be justified. Furthermore, since the purpose is to increase production, average earnings should increase as a result. While we would not go so far as to suggest that all workers should gain, it is probably desirable that all but a few per cent of the poorest break even or gain under the new system.

VII. Evaluation of Scientific Management

While there can be no doubt that scientific management is sound from purely scientific and productive standpoints, there have been a number of criticisms directed against it on social or human grounds. We shall list several of these objections and try to evaluate them as objectively as possible.

A. Men Are Thrown Out of Work

Ever since the advent of the machine age it has been the fear of labor that each man will produce so much that there will be more manufactured than can be purchased or consumed, and before long a sizable proportion of men will be thrown out of work. This "Work Fund" theory assumes that there is just so much work to be performed and that this sum total must be passed around among all those who produce with their hands. Economists rebut that increased production means higher earnings and lower prices, which bring about more buying power. This furnishes a demand for articles beyond the necessities of life, which will be produced by those freed from producing the essentials. These luxuries, then, raise the standard of living. There is one "must" for this train of circumstances to occur—the standard of living must constantly rise. This has occurred, at least in a broad way, as witness the fact that the great majority can afford automobiles, radios, telephones, entertainment, and more clothes than their fathers or grandfathers ever had. But this argument is combated by pointing out that this betterment is a trend—it applies to world markets, average tendencies, and over periods of time—

and that temporary individual employment and job displacement has increased.

A shorter working day and working week has been suggested. It is argued that if a man is worth his living by making so many items, and if he can make those items in five 6-hour days, let him do so and have that much more leisure time.

B. Man Is Made a Machine

Taylor would appear to have so thought when he stated in 1911, "In the past man has been first; in the future, system must be first." And this appears in another connection when he stated that scientific management is so complex that the worker cannot possibly understand why he is to do what he is told, but must reconcile himself to following instructions blindly; and further that systems of incentive pay are so complexly worked out that he cannot hope to understand these either. This, one with practical industrial-relations experience knows full well, is a common complaint among labor. Since pay is computed on such a complex basis, the worker always has in the back of his mind the suspicion that management may be holding back on him. The writer must concede this argument, and urge that simplified formulae be used. Even if they are not quite so accurate to the last decimal place, the men will understand them and be better satisfied.

To other aspects of scientific management, such as having tools and equipment adapted to the worker, having specified work and rest periods, and even to most aspects of motion study, one could not object seriously. Why should a man rebel at doing things in a manner found by experiment to be better in quantity and quality, energy-saving, and safety? Does not one seek out these same improvements when he asks an expert to help him with his golf or bowling game? He knows that in these sports he cannot expect to be consistent and dependable unless he uses the recommended form and goes through the same series of motions, in the same groove, each time.

C. Work Becomes Monotonous and Loses Stimulation

Since the worker does only a part process and since he no longer goes after his own tools and materials, it is claimed that he loses

whatever zest he may have had in his work, and no longer has even the slight relief from boredom that these minor changes in activity furnished. Personally, the present writer must concede some truth to these arguments, and cannot answer them more than in part. This involves the same point discussed under Monotony on page 395—namely, that workers with no great imagination do not become bored, and some actually prefer repetitive tasks so they are not forced to think and plan.

D. Wages Are Not Raised in Proportion to Increased Output

It has been charged that labor is being exploited in being made to produce more and more without sharing in the benefits, and that all the additional income is going into the pockets of the owners.

While we cannot answer for the honesty of all companies, it would be shortsighted for any company which expects to stay in business to stoop to such practices. *Management must keep faith with labor.* In the experiment in loading pig iron, loading was nearly quadrupled, and the earnings went up from $1.15 a day to $1.85. This was not in direct ratio to increase in output; but there are several reasons why it could not be, principally because greater output means lowered prices and a narrower range of profit and because management must bear some added cost in instructing and scheduling.

E. A Speed-up Is Followed by Rate-Cutting

Sometimes it is charged that an improved method or machine has enabled men to turn out so much greater output that workers "ran away with the rates," earned what management felt an exorbitant amount, and accordingly piece rates were cut. (Workers also have been known to soldier on the job while their operations were being studied, to get favorable rates.) Stated thus unqualifiedly, such a sequence may have occurred, but one or more of these events may have happened: cost to management may have increased, price of the product may have been reduced, new competition in the field may have cut margin of profit, and finally the piece-rate formula may not have worked accurately on a different production range from the one for which it was computed. We must emphasize, however, as before, that management

must keep faith with labor, and if rates must be reduced, a full and understandable explanation must be given.

F. Standardization and Speeding up Increase Fatigue

This was a major objection to Gilbreth's early work, but it has been demonstrated many times that this objection simply is not true. A standard motion eliminates wasted energy and enables one to perform the remaining movements with progressively less energy. Referring again to golf, in watching a professional champion one is amazed at the distance achieved with what appears to be a leisurely swing. He has a uniform swing, with proper shifting of weight, and power applied at just the right time. With standard motions the worker finishes the day fresher, there is less danger of cumulative fatigue, and finally there is no evidence that he is worked to death and cast on the human scrap heap as unemployable at an early age.

G. The Cost of Management Is Raised

To do all the research necessary to discover efficient procedures, and to lay out and direct work as carefully as we have outlined does cost a lot. But the same argument can be applied to any other angle of research, testing new products, installing new machines, or hiring better men through an elaborate system of personnel selection. Does one object to months of engineering and road research before a new model of auto is put on the market? It is acknowledged that some cost is added, but does not the increased dependability more than compensate for this cost? New machines, new devices, new methods of work will pay for themselves within a year.

H. Scientific Management Is Aimed Against Unions

Perhaps some of the results of scientific management have a few unfavorable influences on certain union practices, but as a whole such charges are irrelevant. If unions need to restrict output and protect the unfit by eliminating individual differences in productivity, it would seem best to replace them with other organizations which have more constructive collective-bargaining purposes and methods. Scientific management will not deny that

it is opposed to one phase of collective bargaining in that it rewards individual merit, based on production figures, and is against paying a fixed wage to all. It has never opposed a minimum-wage figure, however, but wishes to compensate the better employee in proportion to his merits. Nor does it oppose other phases of collective bargaining: hours of work, overtime and vacation provisions, grievance procedures, or union recognition. It would probably oppose the closed shop, since this might lead to a concerted slowdown which could not be combated. It would also oppose seniority, which provides tenure of position and promotion on a basis other than demonstrated merit. Actually, furthermore, the working out of rates and other phases of scientific management have in many instances been developed in coordination with union representatives.

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CHAPTER XIX

ACCIDENTS AND SAFETY[1]

Can you choose the right answers?[2]

1. As a cause of death among persons of all ages and both sexes, accidents rank (a) second; (b) fourth; (c) twelfth.
2. The most frequent place of accidents is (a) motor vehicle; (b) occupational; (c) home.
3. The leading cause of home accidents is (a) poisoning; (b) falls; (c) burns.
4. Of motor vehicle deaths, pedestrians are involved in (a) 10 per cent; (b) 35 per cent; (c) 50 per cent.
5. The motor vehicle death rate is highest in (a) December; (b) May; (c) August.

I. The Cost of Accidents

That the toll of deaths, injuries, hospital and medical bills, compensation awards, property damage, law suits, and human suffering, is a major problem is well known to all of us. But few of us realize just how serious the total losses are. We worry about governmental expenses, about huge relief costs, about frenzied armament races. Yet if accidents could be entirely eliminated, the savings would take care of most of these expenditures.

The total loss from accidents is placed at over $5,000,000,000 annually. Just in the form of compensation to injured employees,

[1] Although this chapter is placed within the Industrial-Relations section of this book we shall discuss automobile and home safety as well, since these phases of safety are so much a part of daily life, and since two thirds of hours lost from work are due to accidents away from work.

[2] The correct answers are at the bottom of page 420.

one typical state awarded $6,000,000—enough to have completely run the state university. And this figure leaves out auto and home accidents, lost industrial production and property damage.

In 1946, the last year for which complete detailed reports are available at this writing, 96,000 people met accidental death. More than 1,000,000 more were left permanently crippled or disfigured, and 2,500,000 more lost working time. The United States prides itself on being advanced in most ways, but in one of the last pre-war years it had next to the highest accidental death rate of any country which keeps statistics. We had a figure of 81.4 deaths per 100,000 population, only exceeded by Chile with 84.7, in contrast with the Netherlands with 27.3 and 31.2 for Denmark.

At the risk of appearing melodramatic, we might cite a few facts about this accident toll. One person is killed every five minutes; and one is injured every three seconds within this country. Motor-vehicle injuries occur every 27 seconds, one each 18 minutes being fatal. Accidental deaths each year, from all causes, would almost wipe out the population of the State of Nevada, or such cities as Peoria, El Paso, Tacoma, or Duluth.

Taking another approach, think of any group of 1000 familiar to you—a school or small college, a small town, or a fair-sized theater audience. One will be killed within a year and a half, 70 will lose time because of an accident in the next year, and the financial cost of accidents to this group in a year will be $36 a person. "It won't happen to me"—we hope not, but it will happen to a friend or relative if something is not done to reduce this staggering toll.

One word of qualification. We fully realize the seriousness of accidents. But we cannot hope to eliminate them entirely—our goal is to attain the irreducible minimum, whatever that may be. If it is even half of the present rate, 50,000 will be left alive, 500,000 will be uninjured, and nearly $3,000,000,000 will be saved. Further, we cannot make safety the sole goal of business and personal life. We must concede that high-speed transportation and rapid industrial production insert extra risks into life. We can't incapacitate industry and transportation to prevent all possible mishaps. Nor would such a move really be necessary, since it has been demonstrated that production and safety are positively correlated;

that is, the best workers are also the safest, and conversely the poorest producers tend to have the most accidents.

II. Types of Accidents

In 1946 fatal accidents totaled 99,000, as follows:

Table 49. Types of Fatal Accidents, 1946

Home	33,000
Motor vehicle	33,700
Occupational	16,500
Public, nonmotor-vehicle	17,000

The nature of these classes except perhaps public nonmotor-vehicle, is evident enough. That group includes drowning, falls, burns, firearms, explosions, sports, railroad, etc., of nonoccupational and nonautomobile character.

These figures in turn mean that such spectacular disasters as airplane or train wrecks, shipwrecks, hurricanes, theater or hotel fires, mine cave-ins, or explosions, are relatively minor.

Interesting food for thought is speculation about the chances of accidents at home, in the car, and at work, in terms of hours spent in each place. Automobile and home fatalities are nearly equal, with occupational deaths about half of either figure. But the average car is in motion less than an hour a day, and only one member of the family works eight hours, while the average family of four spends a total of fifty to eighty hours a day at home. Much of home life is spent, it must be admitted, in relatively safe pursuits—eating, sleeping, reading, etc. So it is apparent that automobile driving must be exceptionally risky, and that home and industrial mishaps are comparatively few, especially from the standpoint of the number of hours spent.

Answers to questions at beginning of chapter, page 418:

1. Accidents as cause of death are exceeded only by heart disease, cancer, and cerebral hemorrhage.
2. Home and automobile fatalities are almost equal; industrial deaths are only half as numerous as either.
3. Falls cause almost two thirds of home deaths, burns less than a tenth, and other causes are minor.
4. About a third of motor vehicle fatalities are pedestrians.
5. December has most traffic fatalities.

Automobile accidents present certain peculiar problems of their own. One of these is the disproportionate toll in some of the larger cities. In Chicago, for example, nearly 500 are killed and twenty times that many injured each year. A second alarming fact is that the toll has shown a consistent rise since automobiles became common, with only a slight halt during gasoline rationing during the war. This is not solely caused by gross gain in numbers of cars, but may be partly attributable to the steady rise in speed and power, and to better roads which tend to create relaxation and carelessness. This trend contrasts with the material decline found in public transportation (trains, ships, air), factory accidents, and burns and drownings. Fatalities in autos are sixty-nine times as great per person-mile as in railroads.

Another important feature about automobile accidents is their obvious avoidability. Just to cite at this point two major items of proof: more accidents happen to young people who are at the height of their abilities than to any other age level, and a surprisingly large percentage occur on straight roads on clear days. These and other points will be amplified later.

III. Possible Causes of Accidents

There are three possible broad causes of accident: chance, mechanical failure, and human error.

A. Chance

Natural catastrophes, such as earthquakes or tornadoes, are about the only causes of accidents which can be ascribed to pure chance. It is common enough to say, "Tough luck," or "Why did this have to happen to me?" But if an accident were pure chance, it would be as likely to happen to one person as to another. There are wide and consistent differences in rates between one individual and another, one city and another, one state and another, and between age groups, all of which proves that definite, assignable causation must exist. Just the opposite of predestination is the truth—rather than saying that one who has had several mishaps should be spared in the future, the actual fact is that one who has avoided mishap is likely to continue his good record, and one

who has been involved in more than one in the past is likely to have more in the future.

B. Mechanical Failure

A tire blows out, a steering wheel gives way, a scaffold breaks, or a bridge collapses, causing an accident, and this is attributed to mechanical failure. But in the majority of cases some human failure is the link in the chain preceding the mechanical breakdown. *Poor inspection, careless maintenance,* taking chances with old equipment, hoping a worn tire will keep going just a little longer—all are human frailties. Probably in nine tenths of accidents where mechanical failure is blamed for the mishap, human negligence is really the cause. The fault may have been on the part of someone other than the injured individual—another member of the family left a package on the cellar stairs, or a repairman left the car or the machinery in faulty operating condition. But nevertheless it is caused by human carelessness.

One *step further: the great majority of accidents* occur with the mechanism in good condition. In fatal automobile accidents, 93 per cent of cars had no previous defect, and in nonfatal mishaps 95 per cent were in good prior condition so far as could be ascertained. So such excuses as a tire blowing out or brakes failing are rarely better than rationalizations, and are really admissions of gross carelessness for driving the car in that condition.

C. Human Factors

Since we have virtually eliminated *both chance and mechanical* failure from our possibilities of accident causation, we have only human carelessness or negligence to which to attribute the bulk of mishaps. We hope a cracked ladder rung won't break, we allow antiquated cars on the road, we drive after a few cocktails, we window-shop while driving, we tolerate ticket-fixing, and we do not correct defective vision.

The hope of elimination or reduction of accidents depends upon our theory of their causation. If chance were the cause, clearly nothing could be done. A theory of mechanical causation would call for safety devices in all conceivable places—on all machinery, divided roadways and separated crossings, elaborate safeguards in

the home. Obviously this cannot be carried beyond certain limits. We can make some progress by making many accidents physically impossible, but we must take the human causation approach for a really material reduction. It has been estimated that if all known mechanical devices and safeguards were installed, the greatest reduction of accidents that could follow would be only from 15 to 30 per cent of the total.

IV. Automobile Accidents

A. Situations

Before we can attempt to reduce the accident toll, we must discover in what situations and for what reasons mishaps are most likely to occur. It must be realized in advance that it is often difficult to assign satisfactory causes. Was the worker or driver or home owner as prudent as we have a reasonable right to expect? Was it the driver or was it the pedestrian who was actually at fault? Was the true cause overfatigue, or alcohol, or social distraction?

In Table 50 are presented the percentages of the major causes of accidents as collected by Michigan State Police.

Table 50. Major Causes of Automobile Accidents

	Per Cent
Excessive speed	31
Wrong side of road	17
Didn't have right of way	15
Drove off road	14
Reckless	13
Miscellaneous	10
	100

Looking at collisions geographically, at intersections more than half (52 per cent) occur when vehicles are approaching at a ninety-degree angle, with no intention of turning, so presumably one or both drivers simply failed to look to the side. No other situation existed in as much as 10 per cent of instances. Away from intersections, sideswipes are most frequent, followed by head-on and *rear-end collisions. Fifteen per cent* of such accidents involved a properly parked vehicle, which suggests that parking, even when correctly done, is dangerous in crowded areas.

Rural accidents show an amazing fact. In one survey 51 per cent occurred on straight roads, without curve or intersection, and 80 per cent of these were on clear days. Such striking findings put the situation squarely up to the driver.

B. Pedestrians

Pedestrian accidents are less spectacular than those between two cars or a car and a train, but 11,800 persons on foot died in 1946.

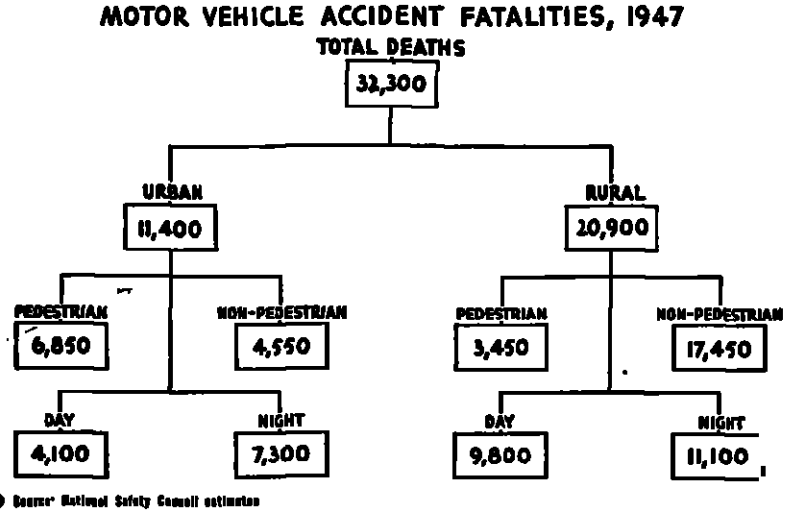

FIG. 24. Traffic Accident Fatalities. (Courtesy National Safety Council)

*In cities over 10,000, two thirds of traffic accident fatalities in*volve a pedestrian; in the country the figure is 20 per cent. And in a city survey of a thousand cases, the pedestrian was at fault—careless, defiant, drunk, jaywalking—in two thirds of the instances. In fact the conduct of some pedestrians reminds one of the motorist who said that the accident couldn't have been his fault as he had been driving for over twenty years, and the pedestrian replied angrily that he had been walking sixty!

The pedestrian has been urged to watch very carefully, since his mobility is greater than that of even the most careful motorist under the momentum of his car, and since he is less visible

especially if he comes out from between parked cars, goes against traffic lights, or jaywalks in the middle of the block. On country roads he should walk on the left, and at night wear some article of white clothing or reflecting material. Of all city pedestrian deaths, 38 per cent occurred while crossing between intersections, 30 per cent in walking on roadways, and 30 per cent at intersections where there was no traffic light. In two thirds of these cases the pedestrian was breaking a law or committing a definitely risky act. Four times as many are killed in the three hours after sunset as in the last three hours before it. That this should be a real warning is seen by the fact that the trend in time of day is not especially marked in nonpedestrian traffic fatalities.

C. Inattention and Carelessness

Inattention and carelessness are impossible to evaluate statistically. No one likes to admit that his attention was on a companion or a bit of scenery, or that he was simply absent-minded at the moment. Yet it is quite likely that this cause is the most important of all to be discussed in this section. Fairly direct evidence is seen in the numbers of accidents occurring in situations which in themselves seem relatively devoid of danger. Open-road accidents, away from intersections or curves, on clear days, have shown a consistent upward trend, while city accidents have slightly declined in the last few years. Pins indicating the place of each accident on a large-scale county map will show concentrations just outside city limits, for which there are many potential causes—relaxation of attention, sudden increases in speed, absence of sidewalks, and presence of taverns and night clubs. Further, in residential and rural areas, many accidents occur because drivers emerge from driveways onto public streets without looking, a bit of unconscious negligence which would not happen in crowded business districts.

D. Time of Day

Time of day and accidents were seen to be associated, from data in Table 44, Chapter XVII. Night automobile accidents have steadily increased while daytime fatalities have been declining slowly over the last decade, until 3 of 5 fatal accidents occur at night. Considering the far fewer miles driven at night, these figures

are even more striking. A peak occurs around 8 to 9 in the evening, when people are bent on recreational and social purposes. Not only is congestion a factor, but so too are reduced vision, glare from other headlights, fatigue, inattention from social distraction, and often alcohol.

It is strongly recommended that one drive at least 10 miles an hour slower at night, because of the reduced illumination and lesser chance of being able to effect emergency adjustments. In passing, one's judgment of speed and distance are seriously reduced, so special care must be taken. Daylight saving has been suggested on a year-around basis, to provide better driving conditions in the rush hour in late afternoon a greater proportion of the year. In fact, one expert estimated that this would save 50 lives a year in Chicago, calculated on daylight and darkness risks.

E. Fatigue

Fatigue has been fairly well controlled in public transportation, where locomotive engineers, bus and truck drivers, and airplane pilots have definite laws and company rules as to the number of hours of consecutive work they can do without a specified number of hours of rest. But the private driver must regulate himself. The businessman who wishes to sleep at his own house after a day's work in a distant city, the salesman who wants to make the next town to get an early start in the morning, the tourist who stays at the resort until evening before returning from his vacation, the college student who tries to drive home after a late afternoon class —all are flirting with the white-bearded man with the scythe! It is far better to pay a modest hotel bill than a large hospital or undertaker's bill, or to curl up on the back seat for a few hours rather than run into the ditch. The gravity of even a moment's nodding is realized when one considers that at 60 miles an hour the auto covers 88 feet each second, and the dozing driver has no chance to recover control or to take a glancing blow.

F. Weather

Weather conditions are so intermingled with other factors that they are difficult to study accurately. Heedless as people are, rain, snow, and ice do seem to inspire caution. In Chicago, where often

several a day are killed; there was one stretch of 72 hours with no fatalities, when conditions were as dangerous as one could think—glare ice and dense fog. Everyone drove so slowly that while there were many minor collisions serious accidents were avoided.

G. Speed

Speed is largely a relative matter. Sixty miles an hour may be fairly safe if the car and tires are in good condition, the road straight and territory sparsely settled. And one third that speed might be extremely dangerous under other conditions. When it is said that in more than half the serious accidents the driver has been going too fast, we must add "too fast under the conditions." *So, hard and fast rules cannot be laid down,* but *we* must consider the car, the surroundings, the time, the weather, etc. There are not only legal speed limits, but prudent limits, variable from time to time.

The faster one is going the longer it takes to stop, and to begin to stop. We must add the driver's reaction time to the mechanical time to set the brakes. At 60 miles an hour, one covers a hundred yards in three and a half seconds, and he will scarcely begin to slow down in this distance. Further, the faster one is going when an accident does occur, the greater the chances it will be serious, as shown in Table 51.

TABLE 51. Likelihood of Fatal Accidents at Various Speeds

Below 20 m.p.h.	1 accident in 70 is fatal
Between 20 and 29 m.p.h.	1 accident in 45 is fatal
Between 30 and 39 m.p.h.	1 accident in 37 is fatal
Between 40 and 49 m.p.h.	1 accident in 30 is fatal
Over 50 m.p.h.	1 accident in 13 is fatal

H. Alcohol

Alcohol is bound to present a confused issue because few are free from prejudice on the subject. The man who pooh-poohs the idea that he is unsafe after "a few" is just as prejudiced as is the prohibitionist agitator. Estimates even by police officials and safety experts reflect this confusion. They vary in blaming alcohol for from 5 to as high as 70 per cent of traffic fatalities. The National

Safety Council, as unprejudiced an organization as could be found, states that in 1946 one of five drivers, and one out of four pedestrians, involved in a fatal accident had been drinking. But they add that only 9 per cent of drivers could be considered "under the influence."

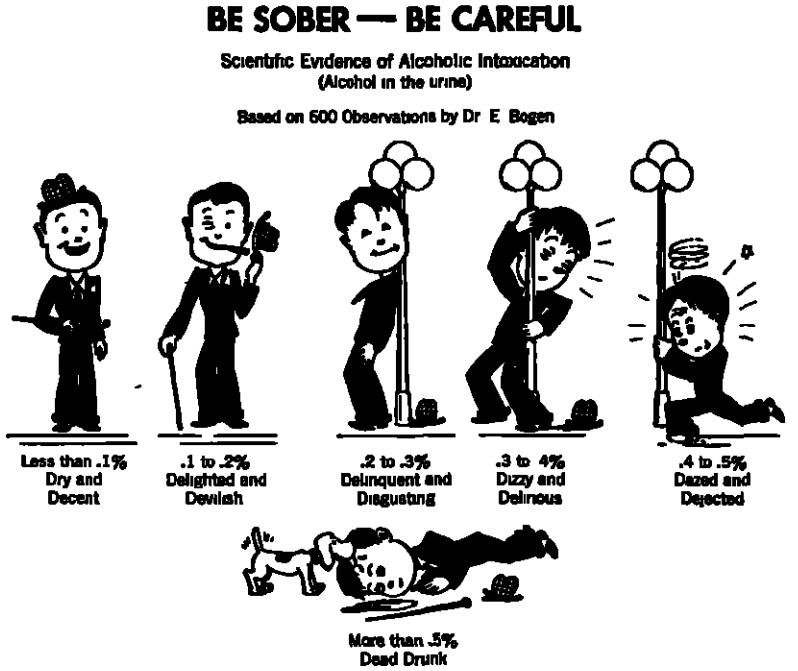

FIG. 82. Effects of Varying Amounts of Alcohol on Behavior.

Blood or urine analysis and breathing tests might be questioned on the basis of the differential effects of alcohol on each individual. One who is a relative abstainer may be more affected than a fairly steady moderate drinker by the same quantity. Also there is the personality influence. One person becomes reckless, another keeps his self-possession and drives extra cautiously or even refuses to drive. It has been said that the "drinking" driver is worse than the drunken driver, because he loses caution and takes impossible chances, not realizing that his reflexes are poor. Judgment is impaired before physical coordination is affected. Naturally, the

only sane solution for one who has gone beyond wise limits is to have someone else drive or to abandon his car and take a taxi home.

The problem in industry is not too great, as one who is under the influence will usually absent himself from work, or if he does report alert guards or supervisors will usually detect his condition. Perhaps more dangerous is not the direct effect of drinking, but the reduced attention and inaccurate coordination the next day. In one study in a foundry in Prussia free drinking was allowed of beverages distributed by peddlers for four years, and in the next four years beer was supplied by management in regulated quantities. The accident toll per 1000 workers fell from 133 to 36.

I. Sex Differences

Sex differences bring about both jest and heated debate on the topic of women drivers. Women in one year were involved in 6 per cent of fatal, and 9 per cent of all accidents. But what are not definitely known are the numbers of men and women drivers, the total number of miles driven by each, and the driving conditions of each. A man will usually drive several times the mileage of his wife, and also does most of the cross country, after-dark, bad weather, and rush-hour driving, each of which conditions presents greater risk than his wife's city-street driving during less congested hours for shopping or social purposes.

In the only comparable study, a survey of men and women cab drivers in a large eastern city, women had almost three times as many accidents as men per thousand miles driven, but the average damage per accident was less. It also appears that women are more likely to have minor property damage, nonpersonal-injury, cases than men.

J. Age

Age, or perhaps better stated as youth, has quite a bearing on accident probability. It is very significant that while boys and girls are enjoying their highest motor and sensory capacities, they still have double the death rate of any other five-year span. Eight thousand lives a year would be saved if drivers under 25 had merely average fatality rates, let alone the superior record they

should have. Personality factors are obviously causative in this instance. In fact, one can legitimately compare the recklessness of the adolescent with that of the partially inebriated individual—each gets into situations from which the best driver in the world could not extricate himself.

The safest driver is from 40 to 49 years, with 30 to 39 second best. Over 70 there is again an increase in risk, which has led several states to demand that all would-be drivers over that age take a new driver's test periodically to demonstrate that they still have adequate motor and sensory capacities.

V. Home Accidents

We tend to think of the home as a safe place, that we need no longer worry over the hazards of traffic and industry once we are under our own roof. Yet as many are killed in their own homes as on the highway, and almost twice as many as meet their death at work. But, as pointed out at the beginning of this chapter, we must allow for comparative times spent. Time at home, counting week ends especially, is much more, and more persons are involved.

Outstanding statistics, summarized rapidly, are as follows: 33,000 met death in homes in 1946; there were 5,000,000 nonfatal injuries, of which 130,000 left some permanent impairment; wage, medical, and insurance losses totalled $700,000,000, of which more than three fourths represented lost earnings. Of deaths, over half were due to falls (16,500) and burns (6,100); other causes—gas, poisons, suffocation—were minor.

It is probable that analyses of home accidents are not as complete or accurate as traffic or industrial. First, no official group is notified of all such accidents, as devolves on the management of industrial organizations or on automobile drivers involved in accidents causing personal injury or property damage beyond a certain figure (usually $50). Second, the loss from injury is less clear, unless it involves the wage earner. Third, it is impossible to compel home owners to install safety devices parallel to those demanded by law in factories, or to keep home conditions safe—such as cellar stairs properly illuminated and free from encumbrance.

The majority of home accidents, however, can be prevented by anticipation, since sudden emergencies arise much less often than

while driving or working. For example, placing electric fixtures well away from the bathtub makes electrocution less likely, or anchoring down small rugs makes falls less probable, whereas machinery or vehicles present moving risks that can only be partially avoided by mechanical safeguards. Study of the outline in Table 52 with this point in mind will demonstrate these arguments.

TABLE 52. Danger Points About the Home

1. Living room: highly polished floors, small rugs, unsafe chairs, open fires, standing (as to hang pictures) on rocking chairs or bridge tables.
2. Kitchen (most dangerous room in the house): fire, hot grease, steam, suffocation, cuts, falls, electric irons.
3. Bedroom: falls (especially dangerous to old people), smoking in bed, electric fixtures, smothering (infants).
4. Halls and stairways: poor lighting, toys, cleaning implements and other encumbrances, absence of handrails.
5. Basement: chiefly fire danger, mechanical implements secondarily.
6. Closets and attics: fire chiefly.
7. Bathroom: fairly frequent accidents, and serious ones—falls in bathtub, electric shocks, poisoning.
8. Outside the house: porch railings, icy sidewalks and steps, playthings on walks, ladders, monoxide poisoning and fire in garage.

Analyzing these situations, it again appears that most of them could be prevented by precautions taken in advance. Only those involving children and possibly those involving carelessness in the bathroom or while doing repair work, seem difficult to prevent by careful and neat household arrangements. Such features as having the rugs provided with safety grips; stairs not too steep, with guard rails, nonskid treads, and well illuminated; taking care not to leave objects on stairs; and having electric fixtures well away from the bathtub, laundry tub, and other places where the wet hand is likely to touch, will obviate many accidents.

VI. FARM SAFETY

The farm has one aspect peculiar to itself, namely, that it serves both as a home and as a place of work. Furthermore, machinery for work and motor vehicles for transportation are essential for modern farm operation. Hence the farm has all three main classes of risk: transportational, residential, and occupational.

Accidental deaths of farm residents total approximately 20,000 annually. This total is divided roughly as follows: 7000 in house accidents, 7300 by motor vehicle, 4300 in occupational pursuits, 1900 in public nonmotor-vehicle mishaps, and 1000 in motor-vehicles while working.

Farm home accidents show the same two leading death causes, falls and burns, as for homes in general. Work fatalities are prin-

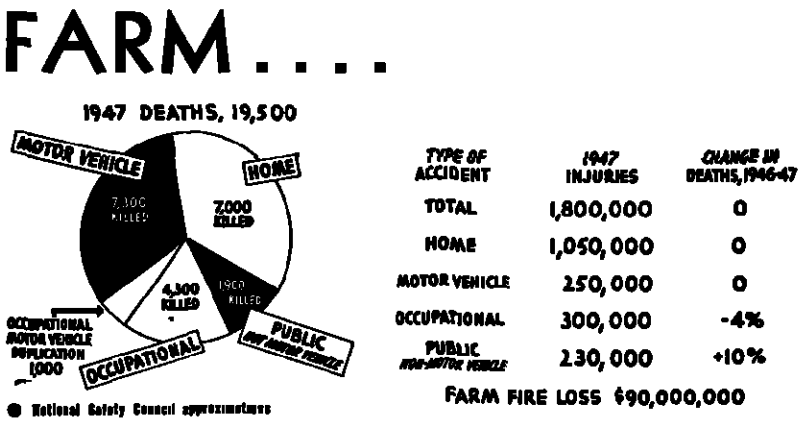

FIG. 26. Farm Accident Frequencies. (Courtesy National Safety Council.)

cipally from machinery, livestock, and falls. These occupational deaths of farm residents made up 27 per cent of the 1946 nationwide occupational death total. This figure represents a risk of more than three times the industrial hazard, hours of exposure being *held constant*.

Special care and instruction are necessary on these principal farm situations: operation of tractors and other machinery on rough and sloping terrain, handling and precautions about work animals and livestock, fire risks which may be especially serious away from city fire-fighting equipment, and even proper driving habits while in more congested city areas.

VII. INDUSTRIAL SAFETY

Tabulating the causes of industrial accidents is much more complex than with automobile or home mishaps, since conditions are

so much more varied. We can, however, in breaking in a new worker give specific instruction about the most likely danger spots to be encountered in his particular duties.

Broadly, accidents have two main causes: *faulty environment*, and *faulty human conduct*. Faulty environment has been broken down into these six groups:

1. Improper guarding
2. Defective substances and equipment
3. Hazardous arrangement (poor housekeeping)
4. Improper illumination
5. Improper ventilation
6. Improper dress or apparel

Faulty behavior involves these major groups of causes:

1. Improper job placement, in terms of intelligence, previous experience, health, physique, emotional and personality traits
2. Poor training, in actual instruction or in example set, failure to correct and follow up
3. Careless supervision
4. Inadequate and inconsistent discipline

An important fact is that all occupations do not present equal hazards. Naturally office or store work does not involve the risks encountered in factory production, transportation, or mining,

TABLE 53. Deaths and Death Rates of Workers for Several Industries, 1946

Industrial Group	*Total Deaths*	*Deaths per 100,000 Workers*	
Mining, quarrying, oil and gas	1300	163	Risky
Construction	2200	105	
Agriculture	4500	54	Average
Transportation	1700	53	
Public utilities	400	33	
Service	2500	18	Safe
Manufacturing	2500	17	
Trade	1400	14	

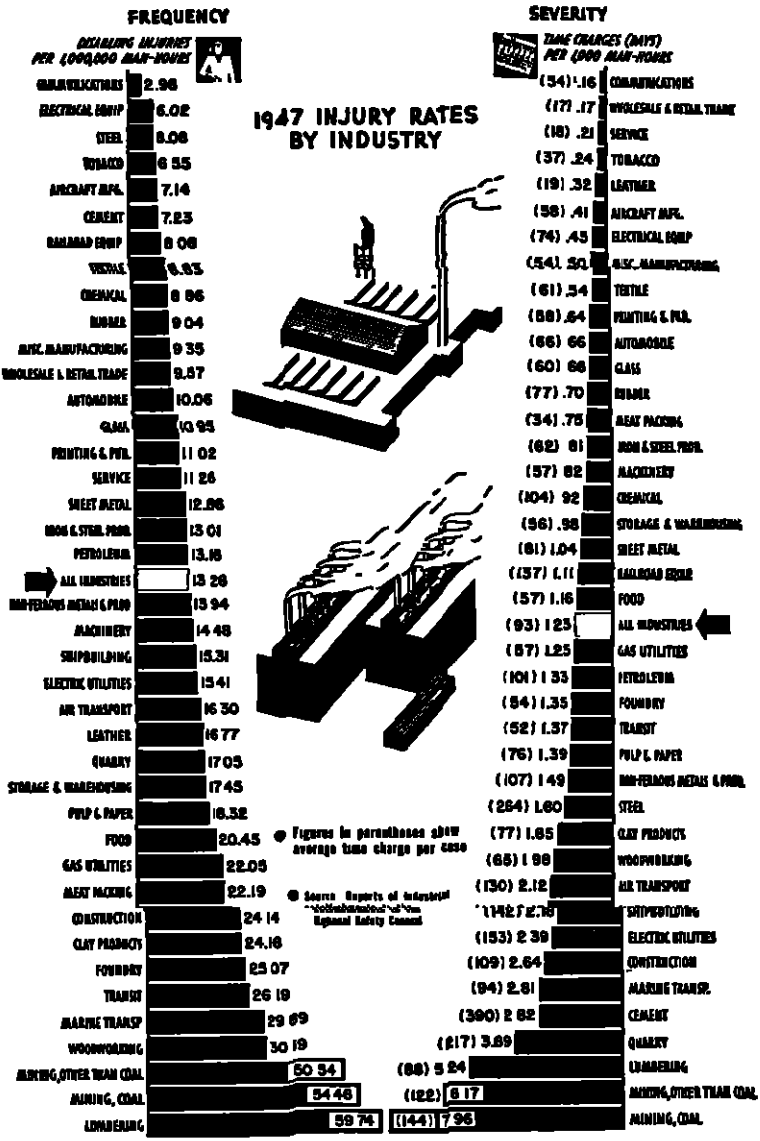

FIG. 27. Frequency and Severity Rates of Lost-Time Accidents for Leading Industries. (Courtesy National Safety Council.)

where heavy objects are in motion. Table 53 shows such differences.

Within the broad group termed "industry," those with very low rates—as compared with an industry-wide average of 14.16 disabling injuries per 1,000,000 man hours worked (the formal definition of accident frequency)—are communications with 3.33, aircraft manufacturing with 6.40, and steel with 7.19 as low risk situations. In the middle range we have textile at 11.44, shipbuilding 12.29, and petroleum 13.61. The most dangerous are lumbering at 59.66 and coal mining with 61.70. Severity rates—days lost per 1000 man hours, which indicates the seriousness of an accident once it has occurred—corresponds fairly closely to the above, although certain industries such as steel are characterized by not too frequent mishaps but severe ones when they do occur. We note, too, that farm accidents cause about a quarter the total of occupational fatalities.

All such figures, however, do not necessarily represent the relative hazards of the various occupations without some qualification. More strenuous efforts are usually undertaken in a steel mill than in a tailor shop. Also in time of expansion or national emergency there is a tendency to give the new worker very scanty training and put him into actual producing too soon in his learning period, with the result that accident rates increase materially—and these increases can be traced to the first days or weeks of employment.

Safety devices are designed and installed on the assumption that workers will be clumsy or careless at times, and even may defy existing rules, so an attempt is made to render accidents as near physically impossible as can be effected without stopping production. Let us list a number of such devices:

1. Shoes with steel toe caps, protection against falling or moving objects
2. Helmets of metal or composition
3. Safety belts, for persons working in high places
4. Shatterproof glasses, to protect against flying chips penetrating the eyeball

5. Colored lenses to prevent damage to the eye in welding, peering into furnaces, etc.
6. Shatterproof glass in windows over grinder wheels
7. Asbestos leggings and aprons, when handling molten metal
8. Respirators, for dust, stone particles, chemicals

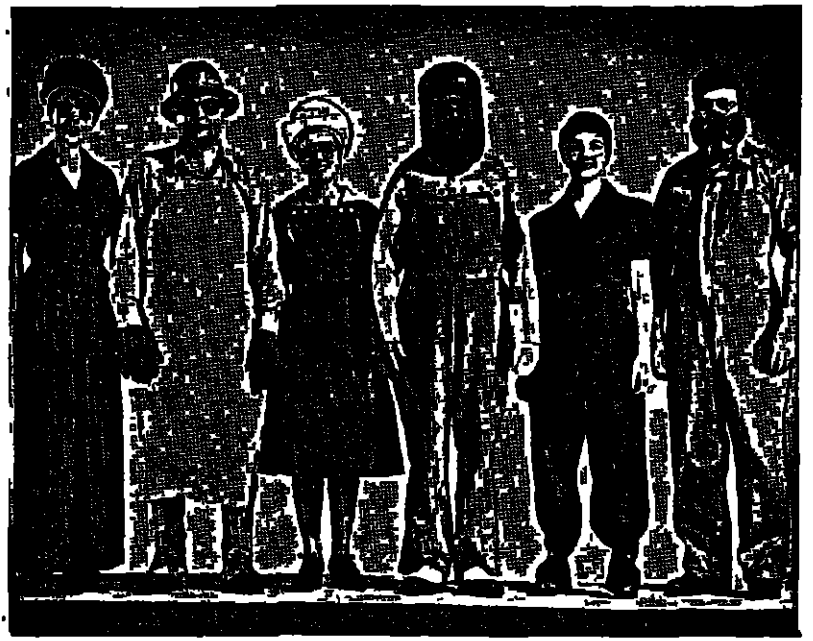

FIG. 28. Industrial Safety Clothing. (Courtesy National Safety Council)

9. Carriers and hoists, to lift and guard against rupture
10. Automatic devices to prevent machinery from starting unless certain precautions have been taken, such as elevator doors closed or hands away from machinery. May be controlled mechanically or by electric eye
11. Rubber feet on ladders, floor roughened or of special material to prevent slipping
12. First-aid kits, blankets, stretchers, fire extinguishers, automatic sprinklers—both to prevent accidents when danger threatens and to minimize their severity when they do occur

Prevention: Let us inspect briefly various ways in which elimination and reduction of industrial accidents have been approached:

1. *Research*—study the causes and situations in which mishaps actually occur, and approach from a basis of actual fact rather than preconception.

FIG. 29. Industrial Safety Equipment. (Courtesy National Safety Council.)

2. *Mechanical safeguards,* in the form of clothing, attachments to machinery, or design of equipment, to make accidents as little likely to occur as possible.

3. *Proper care of tools and equipment:* Tools which are dull, cracked, splintered, or with mushroomed heads may result in serious injury to hands, eyes, and other parts of the body. Don't try to limp along with machinery in imperfect condition any more than you would embark on a long auto trip with several defects in tires or motor. Use proper ladders, stepladders, and scaffolds, rather than makeshift devices, which at best save a few

minutes and may cost months of lost time. Keep aisles and exits clear; keep paint and oil containers covered and away from fire hazard; do not allow projecting edges or points to protrude near where workers may be walking.

4. *Safe and proper clothing:* We have already mentioned steel toe caps, helmets, protective leggings, aprons, gloves, goggles, etc. At first it was difficult to persuade workers to use these devices, partly because they were considered "sissy," and partly because they were cumbersome or definitely uncomfortable. Goggles clouded with perspiration, helmets were so heavy that they produced headache, shoes were awkward and unsightly. Now, to name one instance, safety shoes come in various widths, are as carefully fitted as street shoes, and look well enough to be worn away from work. Women's oxfords particularly have been improved. Likewise certain regulations must be applied to clothing: short sleeves and no necktie, no articles that might catch in revolving machinery, no jewelry (even a wedding ring has been known to cost a finger), hair under cap or held with bandanna, high heels prohibited; composition or other soles to prevent slipping according to the surface to be walked on.

5. *Enforce safety regulations strictly and consistently.* Rules on clothing and safety equipment, use and care of tools and machinery, precautions in pouring molten metal or in blasting, first aid in minor accidents, must be enforced 100 per cent of the time by all supervisors, and workers should be so interested in promoting safety that they will use moral persuasion on each other. After all, an accident affects not only the injured man, but may damage machinery and otherwise interrupt production, distract fellow workers, and often leaves the whole department upset and below normal effectiveness for hours. It should be understood that flagrant or persistent breaking of safety regulations is punishable by layoff or discharge.

6. *Health and safety away from work* are relatively new goals striven for by many companies. It is certainly justified, when one considers that of all wage earners killed, two out of three meet their deaths away from work. A man is as much a loss if he is out due to poison ivy, sunburn, injury from automobile accident or carelessness in the home, as if he met with a mishap of equal

How Many Unsafe Practices Do You See?

● **Remember the old picture puzzles used in advertising of an earlier day? Our artist, Alex Batishko of Finch, has reproduced one of them to test our knowledge of occupational safety. How many unsafe practices can you find in the bottling house scene above? There will be no prizes for good grades. A perfect score of 29 will guarantee you a long and happy future.**

FIG. 30. Unsafe Working Practices. (Courtesy Joseph S Finch Company.)

severity while at work. Diet according to season of year, sane exercise in accordance with one's work duties, proper hours of sleep, and precautions against colds, can also be mentioned.

Many plants maintain free medical service, and feel it a worthwhile investment, partly because it inspires employees to take care of a slight cut or a minor cold whereas they may let it become serious if they have to spend their own hard-earned cash for treatment. Near the drinking fountains will be placed dispensers of salt tablets, to maintain the salt balance in the body during hot weather, particularly where the work itself is in a very hot place.

7. *A constant and ever-changing program is necessary.* Little results from a "Safety Week," or from displaying the same placard indefinitely. Management must realize that people get careless with familiarity and passage of time. Constant enforcement, checking up, and inspection are necessary. Twenty-four hours a day, fifty-two weeks a year must be the program. Safety signs, placards and bulletins must be changed weekly or even daily; otherwise they become integral parts of the customary environment and cease to serve as attention-getting stimuli. Appeals to pride seem to work well, such as bulletin boards showing the number of man hours of work since the last lost-time accident on the part of each department.

VIII. Accident Susceptibility

One fact which goes far to prove that accidents have determining factors, rather than chance, is that there are wide differences in the rate between one individual and another, one plant or company and another, and one city or one state and another. When more than half the workers in a large plant have no mishap in two years, yet several employees have from ten to forty apiece; when one city has five times the automobile fatality rate of another city the same size; and when one state has five times the motor-vehicle death rate of another—then our case against chance becomes even more convincing.

We could cite a vast array of statistics on this point, but have the space here only to report the findings in a few sample investigations in several different fields, factory, automobile and truck driv-

ing, streetcars and buses, and group results obtained by companies and cities.

One study surveyed 30,000 drivers in Connecticut over six consecutive years, and the investigator's conviction was that chance just was not, and could not have been, the cause (*8*). Nearly 40 per cent of accidents to this group accrued to less than 4 per cent of the drivers. Furthermore, once a driver had had an accident, his liability to have another within a prescribed time was approximately doubled; and accident repeaters tended to shorten the time between successive accidents. Finally, young drivers kill 3.5 times as many as middle aged, even though they drive only a third as many miles a year.

In Table 54 are presented comparative figures on a number of cities for motor-vehicle fatalities. These figures represent differ-

TABLE 54. Motor Vehicle Deaths Per 100,000 Population in Cities over 500,000 in a Single Year

City	*Death Rate*
1. Washington, D. C.	7.1
2. Milwaukee	7.3
3. Boston	7.5
4. Philadelphia	8.1
5. Pittsburgh	8.2
6. New York	9.2
7. Baltimore	10.7
8. Buffalo	10.8
9. Detroit	11.0
10. St. Louis	12.7
11. Cleveland	13.4
12. Chicago	14.3
13. San Francisco	15.8
14. Los Angeles	26.6

ences not only for the year 1946, but they are very consistent year after year. A word of praise must be given to three cities on the basis of excellent records year after year, in their respective population classes. These are Milwaukee, Wisconsin; Evanston, Illinois; and Providence, Rhode Island. On the basis of National Safety Council statistics, each of these has taken first place in its own group several times. This demonstrates that accidents *can* be re-

duced. In all three cases, the writer would say from personal observation and experience, the principal factor is sane traffic ordnances, enforced adequately, consistently, and impartially.

State totals, shown in Fig. 31, involve from tens of thousands to more than a million registered vehicles, and can be nothing else but convincing. It is important to note that density of population, suggesting likelihood of risk, is far from the actual cause. The mountain states have a rate several times higher than the New England states, where population is greater and cities are much closer together. Can it be that the "wide-open spaces" invite excessive speed and a tendency to disregard caution? The longer average trip, with consequent greater speed and fatigue, may also be contributing factors. With cities we can also speculate on probabilities. New York and Boston are congested, have adequate subways and therefore fewer autos, in contrast with Los Angeles which is very spread out and where many commute by car long distances daily over crowded city streets because it has inadequate rapid public transportation facilities.

To refer to another field, commercial truck driving, we can cite some remarkable accident-free records. More than 1,000,000 no-accident miles were reported for 13 fleets in one year, the best by an intercity packing company, with slightly more than 4,100,000 miles. The other fine records were compiled by a variety of businesses: petroleum, newspaper, bus line, bakery, dairy, public utility, laundry, and others.

Causes of accident proneness may be divided into three principal groups, motor, sensory, and psychological. The latter are principally bad habits and emotional conflicts. It appears to the present writer, after surveying many studies of these factors, that the approach must be individual and diagnostic in nature. In one such study, DeSilva (*4*) compared 56 accident repeaters with 199 volunteer motorists on a battery of tests. The repeaters showed consistent deficiencies in braking-reaction time, vigilance-reaction time, vigilance steering, steering-braking combination, speed estimation, and depth perception. The combined braking-steering test was actually the best single differentiater. The author commented that he preferred to make interpretations from a profile graph rather than using test scores singly or in groups. Among personal factors, repeaters tended

1947 MOTOR VEHICLE DEATH RATES

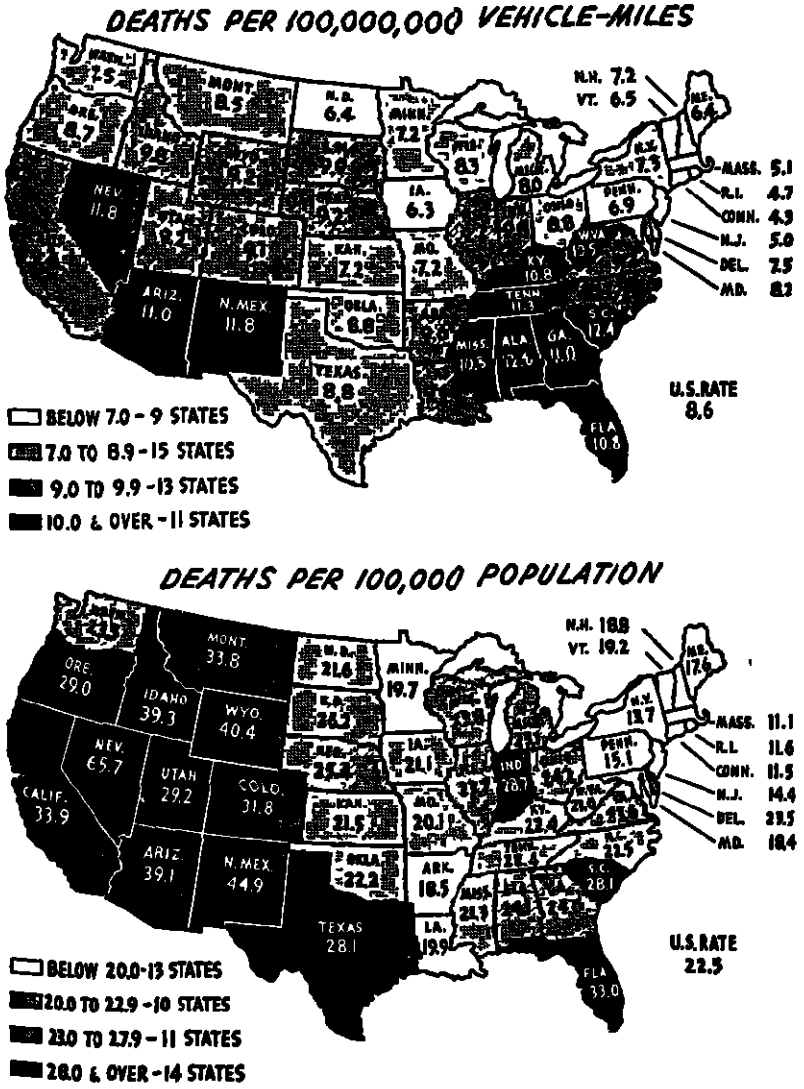

FIG. 31. Motor Vehicle Deaths for a Year, by States, in Terms of Miles Driven and Population. (Courtesy National Safety Council.)

to be single, to be in the semiskilled groups and rarely in the professions, mainly lived in cities; more drove with one hand even while taking a test, and there was little difference in length of driving experience. Also, they tended to have been taught to drive, which may seem rather peculiar, but the investigator suggested that perhaps they had shown poor aptitude and some member of their family might have attempted instruction; there was no suggestion that instruction might have been given by a properly trained expert. In general the author points out that the accident-prone driver is a less fit member of society—physically, economically, educationally.

TABLE 55. Major Accident Causes (9)

1. General health.
2. Chronic drinkers have 123 accidents per 100 employees a year, whereas the general average is 44; and they lost 2.87 days versus 0.94 days for all employees—a 3:1 ratio in both scores.
3. Temporary emotional upsets distort judgment, upset coordination, distract and cause inattention, and cause worries about other matters as well as the original cause.
4. Exhibitionism—showing off may be compensation for supposed defects in other directions.
5. Neuroticism—excessive worry may lead directly to mishap.
6. Guilt—self-punishment or self-injury.
7. Poor training—the author says proper training is more important than posters, campaigns, and other inspirational techniques.
8. Bad habits, which are hard to break.
9. Poor attitudes—defiant against authority, etc.
10. Age—risk decreases to age of 40, then rises again with older workers.
11. Experience—risk drops with practice, but may rise again due to carelessness.

Several authorities blame the majority of repeaters' accidents upon personality, and even psychiatric factors. They feel, and probably correctly, that low sensory and motor capacities are seldom the true causes, and that they occur only in slight tendencies rather than as important factors. Alcoholism is to be considered not as a drug effect, but as a personality failing if a man will get into unfit condition just before reporting to work or driving. Similarly, frequent quarrels with supervisors or fellow workers are evi-

dence of underlying conflicts. Other factors are revengeful attitudes, feeling of being unlucky, immature personalities, overambitious, overfearful, feeble-mindedness, and presence of organic disease. We must reiterate as a conclusion our initial statement that accident repeaters must be studied individually, and diagnosed to ascertain what factors are operating in each case.

The next step involves three principal possibilities: new habits, removal of relief from emotional problems, and forbidding incorrigibles from driving. This step is best handled by clinics, to be mentioned in the next section of this chapter.

IX. Accident Reduction

Many points under this heading have been taken up *in situ* when we discussed how accidents occur, so much of this section will consist of summarization.

A. Engineering

One possible way to reduce accidents is to construct highways, automobiles, machinery, and the home environment so that most accidents cannot happen, and so that those which do occur will be less serious. In highway construction, we have such devices as divided roadways, four-lane pavements, underpasses, and cloverleaf intersections to eliminate left turns. The divided roadway makes head-on collisions physically impossible, and these are the ones which are very likely to have fatal results. When US 1 in New Jersey was divided for a number of miles fatal accidents dropped by 83 per cent and nonfatal by 49 per cent. We recognize that only the most heavily traveled highways and intersections can be thus handled, because of the enormous expense involved. So practicality limits highway design to make accidents physically impossible or unlikely.

Automobile construction, in the form of safety glass, better brakes, all-steel bodies and roofs, sturdier bumpers, and tires less likely to blow out, prevents many accidents and has great value in reducing the severity of those that do occur. No construction, however, can absorb the shock of a head-on collision of two cars at high speed, or of hitting a bridge abutment or train.

Of more definitely psychological character is the design of highway warning signs. Stop signs, warnings of curves, hills, intersections, etc., have been designed as to shape, size, style of letters, color of paint, and other features, as well as study of their proper placement.

Factory and home devices to prevent accidents mechanically have already been discussed.

B. Inspection

In factories monthly inspection of possible hazards *by an outside expert* will reveal conditions which are ignored due to familiarity by even the best inside safety man. In addition to machinery and transportation hazards, special care should be taken of electrical fixtures and devices, elevators, and fire hazards. Fire fighting and first-aid equipment should be inspected regularly to ensure its proper working order.

Many states require regular safety inspection of passenger and commercial motor vehicles, testing such features as brakes, tires, windshield wipers, lights, horn, rear-view mirror, and other devices necessary to operate a car efficiently and safely.

Home inspection is generally neglected, but an investment of an hour a month to look over the house from basement to attic, as well as constant care to keep stairways clear and electric fixtures in proper order, may pay large dividends.

C. Law Enforcement

With 30,000,000 cars on the road, regulations are obviously necessary. To be effective these must be sane, reasonable, and impartially enforced.

1. *Speed limits* must be reasonable if they are to be respected. A 15-mile sign in a town of a dozen houses simply will not be obeyed. It would appear that limits of 20 miles in the most congested business districts, 30 in residential, 40 in suburbs, and 50 to 60 in the country, are proper and workable.

2. *Strict enforcement* demands precise, not approximate, obedience to the law. In the writer's opinion, strict enforcement is the key to Milwaukee's excellent record year after year; the limits are sane and reasonable, but a posted limit means a real absolute

limit, and one is subject to arrest at one mile faster. Evanston, Illinois, with its yearly fine record, deals harshly with anyone who is in a mishap and has been speeding or otherwise doing something illegal—whether or not this caused the accident, it clearly contributed to it.

3. *Fixing and immunity,* available to petty politicians and their friends, cannot be evaluated statistically. The worst feature is that morale is weakened; if local "big shots" need not observe stop signs and speed limits, why should you and I? One large New York State city actually reduced accidents to 40 per cent of the former total by the simple expedient of eliminating fixing—every ticket was numbered and had to be accounted for.

4. *Drivers' tests* will ascertain if one *can* drive adequately, although we can never be certain that he *will.* At present slightly more than half the states have drivers' tests, and all but two have license requirements, although three more issue licenses on payment of fee alone. Formal licenses permit one major benefit: violations can be recorded on the license and subsequent violations punished progressively more severely. Otherwise, as a Chicago judge pointed out before Illinois required licenses, each offense had to be treated as if it were a first violation, especially if each occurs in a different district. Continued violations are justifiably punishable by lengthy or even permanent suspension of the driving license, on the premise that driving is a privilege for the qualified, not a right for anyone who has money enough to buy an automobile. It is to be urged that tests should be strict enough to cover all phases of driving—both a variety of actual driving situations and a comprehensive written examination.

5. *Jail sentences* are being used somewhat more frequently for wanton offenses, as they are often a more genuine punishment than fines, especially for the well-to-do or young people. The latter's money is their parents', not theirs, so does not represent a day or week of their own work.

6. *Compulsory insurance, demanded in several states, protects* the victim although there is no evidence that it reduces accidents. Unfortunately when insurance is voluntary, it seems to be the prudent driver who is also prudent about protecting others, whereas the other person is careless in both respects.

D. Drivers' Tests

Drivers' tests may take any or all of the following forms:

a. Motor speed and coordination
b. Sensory capacities
c. Emotional and personality factors
d. Knowledge of rules of the road
e. Actual driving tests

1. *Motor coordination* may be measured by speed of simple and complex reaction times, and by simultaneous coordination of several processes. Apparently the chief value of such tests is to let the driver know if he is exceptionally slow or fast, so he can behave accordingly, giving other drivers ample warning of his intentions, and allowing himself ample safety margins.

2. *Sensory tests* likewise serve to notify the motorist if he is near or far sighted, has proper eye coordination, can withstand glare, has defective hearing, is poor in estimating distance, or has some color deficiency. None of these handicaps is serious in itself, provided the individual knows his shortcomings and acts accordingly. For instance the person who has become hard of hearing should make extra use of his rear-view mirror or one mounted on the fender.

3. *Emotional and personality factors* are difficult, perhaps impossible, to test in relation to the driving situation. Suffice it to say that it would be interesting to find out which individuals turn into bullies when in control of a powerful mechanism, which blow up, and which show a high degree of stability in an emergency.

4. *Knowledge of rules of the road* can be readily tested in either a written or an oral examination. The validity of such a test can only be determined by comparing the written answers with subsequent highway behavior. As with the majority of tests, knowing and doing are often two different things. Such a written test, however, demands that the driver at least know the rules.

5. *Driving tests* will disclose whether the driver has control over his car. Early tests consisted simply of driving around a block, but standardized tests, often given on a specially prepared course rather than on the public highway, are the present practice. The

examiner will ask the applicant to make various turns, park, back, stop and start on a grade, and similar standard maneuvers, all the while noting his degree of control, smoothness of driving, caution, conformance to regulations, and hand signals.

E. Study of Near Accidents

Study of near accidents is a familiar industrial technique. Foremen and safety inspectors are instructed to note and report all situations where close escapes from accidents may have occurred. The negligence may have been just as flagrant as in a real accident—just luck that no one was near enough to be injured—so corrective measures are decidedly in order. Furthermore, reports on near accidents may be more accurate than those of actual accidents, since one does not feel so compelled to protect his job and reputation.

F. Training Courses

Training courses for young drivers have been installed in many high schools and colleges with excellent results. Research in the field of learning, be it industrial skills, personality, emotions, or accident prevention, has shown that it is far better to acquire proper habits when one begins than to attempt to change them later. It is clear that skillful driving is a matter of mastery of important fundamentals first. In training courses the student is taught the principal mechanisms of the car, then learns to back and go forward slowly, and thus gains complete control over the *accelerator pedal, the clutch, and the brake, before he drives in* the complex situation of the open road. Thus habits of safe driving, as well as those of skillful manipulation, are inculcated in advance of actual performance.

The question has been raised whether such courses, or school patrols for grade-school pedestrians, can inculcate habits of caution into our youngsters which will hold over on week ends, during vacations, and when they are old enough to drive the family car. It is doubtful if there is complete carryover, as evidence from the broad field of transfer of training would suggest. To be practical, and avoid the merely hopeful, we must in all conscience urge that safety habits be formed for each particular situation.

G. Pedestrian Education and Regulation

Walking is so common that many pedestrians are very careless, and the same person who may drive carefully takes absurd risks when on foot, perhaps feeling he can dodge quickly if need arises. Some pedestrians even adopt a militant attitude, almost of "Go ahead and try to hit me." They should be taught to regard any traffic light as one which protects their safety in one case by affording them clear passage, and in the other by temporarily restraining them from stepping into the flow of traffic. But we recall that fatalities among pedestrians form about two thirds the city total, and one fourth the total in country districts. Extensive surveys in Illinois and Indiana disclosed that pedestrians were involved in more fatalities than could be traced to any other single situation. London, by the simple expedient of stopping jaywalking (with serious penalties for violations), reduced deaths by one third. The image often conjured up of two cars tangled in twisted wreckage as typifying the average accident should be replaced by a vision of the pedestrian who produces only a slight dent in the fender or a broken headlight.

H. Propaganda and Education

The word propaganda often has a sinister interpretation, but it can be more accurately defined as the use of emotional appeals to convince. Since these appeals are so effective, those of us interested in accident prevention may as well follow the advertiser. Safety campaigns must be more than temporary or sporadic. We have so many "cheese weeks" and "mother's days" that one more means little. To inculcate a permanent attitude of accident prevention, the campaign must be started with the young, and appeals must be changed frequently to prevent their losing stimulus value. Several years ago a concerted campaign reduced automobile fatalities by several thousand a year, but when this campaign was relaxed the upward trend was resumed.

I. Accident Clinics

Accident clinics have been established for drivers and industrial workers. They are of course handicapped in having to depend for

their "clientele" upon persons who have had several mishaps. Repeaters do constitute a real problem, as we have seen, so correction of persistent faults does become important. One driver was hit six times in a single month, and each of the six appeared to be the other driver's fault. Yet when all six were found to involve woman drivers it began to look suspicious. The difficulty was finally traced to his personality; while he was a slow and cautious driver he hated to have women pass him, so if one started to go by he speeded up, which naturally vastly increases the likelihood of a wreck. Another driver, twenty years accident-free, had several within a month, all at intersections. Analysis disclosed that he had gotten his first glasses only a month before, so he was warned of the special necessity of looking carefully to right and left before crossing intersections, and no further trouble occurred. Another case was of a salesman who bragged about his exceptionally quick reactions. This was true enough, but he stopped so quickly that following cars often struck him. He was warned to modify his habits, to stop more gradually after giving hand signals well in advance.

Industrial repeaters may be similarly studied in terms of their habits and generalizations from their accidents. Perhaps retraining in job skills will develop safer habits. Possibly they need glasses, hearing aids, etc. Perhaps they are careless about wearing safety devices or clothing. Finally transfer to another job may be indicated, if one is too seriously handicapped by a sensory or motor defect, or due to the physical or emotional effects of previous accidents has become more risky in his present job.

J. Attitudes

Attitudes are perhaps the crux of accident prevention. Possibly all the foregoing suggestions are secondary to *definite, conscious, and constant determination not to have an accident.* This means that one takes driving, working, or managing a home as a serious matter, with full realization that a moment's lapse may cost a life, a lifetime of regret, lost time, or—the least of these—destroyed property, which after all is replaceable. These attitudes may in a sense be said to be the only truly constructive means of accident prevention. The others consist in preventing accidents by engineer-

ing, mechanical preventatives, keeping unsafe drivers off the road, keeping the home in order, and strict law enforcement. We emphatically do not discourage these means—all of them should be used to the hilt—but progress will be only fractional until every worker, every motorist, and every home dweller develops and keeps a constant mental set of doing things safely and does not merely satisfy himself with hoping that an accident will not happen to him. There is no place for a fatalistic attitude in accident prevention.

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CHAPTER XX

INDUSTRIAL RELATIONS RESEARCH

I. Importance of Research

It is difficult to conceive of conducting industrial-relations activities without research, and certainly little progress would be made without constant critical inquiry into all phases of activities. If we consider industrial relations as endeavoring to approach the human problems of business and industry in a logical and scientific way, we must recognize as the next step that a scientific approach demands facts.

Throughout our education we constantly hear of research. We hear of research in psychology, education, sociology, chemistry, geology. We know that companies manufacturing steel, automobiles, rayon, and paint are constantly doing research to improve their products in quality, durability, and economy. Now we are considering industrial-relations research.

Research with some writers is virtually a shibboleth, to be spelled with a capital "R" and worshiped as some kind of mysterious and supernatural procedure available only to the initiated. There is nothing mysterious or abstruse about it, even granted it can best be done by a trained individual. Research consists in the collection, analysis, and interpretation of facts, together with accurate utilization of our findings to validate and improve methods.

Is industrial-relations research fundamentally different from other kinds of research? No, not at all. There may be minor differences, but the same broad principles cover all types of research.

Our problems usually demand study in the working environment, so are that much more complex to approach than would be the case if we could use purely laboratory situations and techniques. But certain phases of industrial-relations research can utilize the laboratory. We have quoted a number of these studies when we discussed aptitude tests, principles of teaching and learning, fatigue, effects of noise and monotony, and certain phases of time and motion study.

Other problems, and some phases of those just mentioned have to be studied in the actual working environment, while the worker pursues his customary tasks. For instance, both fatigue and motion studies must be conducted without the worker knowing we are taking records, or his normal pace of work may be influenced. We saw the same to be true with monotony and noise. Such studies naturally lack laboratory simplicity, where one factor at a time can be varied, held constant, or even eliminated, because in the actual working environment there are almost always several variables complicating our conclusions. The working situation does make research of this nature less controlled and accordingly less conclusive than is possible with, say, college students, whom we can test (if necessary) in sound- and light-proof rooms, free from distractions, with accurate measuring instruments and with single variables manipulated one at a time. This comparison is not intended to discourage research in industry, but only to point out some differences in approaches and techniques, and in sharpness of results. Research is advisable and necessary, and will usually show results which will amply justify its modest cost.

Still another kind of research used in industry, as well as other social-science fields, is through library work or reviewing practices and recommendations of other companies. To one with a background of pure laboratory research this may seem a very different kind of approach for unearthing original facts, but the writer is of the opinion that laboratory training will inculcate in one such a scientific attitude that he will be able to do a much better and more valid job of whatever other type of research he may tackle. The more cautious and painstaking he is, provided he has not become so demanding that he is a perfectionist and never arrives at any definite conclusion, the better work he will do.

Let us cite a concrete example of this type of research. Suppose we wonder if our vacation policy is sufficiently liberal to provide fair treatment to our employees. We would wish to consult practices of other companies, to see where we stand on the various angles of employees' vacations. In examining others' practices we must be as critical as in conducting research in the laboratory of our own organization. It has been said aptly that research is not democratic, because two or three excellent studies will outweigh several dozen made superficially. We cannot merely conclude that since, say, 70 per cent of companies grant so much vacation to employees after a full year's service, we should follow the majority. Rather we ask which companies grant that much and other amounts, how liberal and up to date their other labor policies are, and what current trends are, so that we can place our practices in the vanguard, and not bring up a grudging rear, or simply follow practices which may be conducted by other companies, including some whose examples we might not wish to follow.

A final type of research is still less definitely scientific. It consists in surveying opinions of executives and other employees of the company before embarking on any projected program. New programs usually have some sort of precedent in previous individual handling of that general situation, and to sell a proposed program one cannot depart too far from past practices of major executives. New policies cannot simply be issued by fiat.

Discussion of these various forms of research suggests a very informal definition or description of the duties of the research division of the industrial-relations department. While these will vary greatly from one company to another, a general theme permeates the majority. Industrial-relations tasks of a rather lengthy nature, which require careful study, surveys, comparisons; and investigation are turned over to the research division for intensive study and preparation of a solution. This may sound as if this group operates as a sort of grab bag, and perhaps that is partly true. The majority of letters and inquiries can be answered relatively quickly, but many others require careful consideration and investigation, and this is one of the major functions of the research division. This does not suggest that other divisions do not participate in duties where an immediate answer cannot be made. Far from it—

such divisions as personnel, training, labor relations, wage and salary administration, and medical have many long-range programs of their own. But often in such cases the research division is called in for joint cooperation.

One final comment about industrial research. Research cannot be turned on like a water faucet nor done by the clock. Especially such programs as validating employment procedures (Chapter XII) demand a certain lapse of time before one sees whether good employees are being secured, or whether we need to shift our emphases and techniques in hiring. Some leads turn out to be unprofitable. This should not be held against the researcher, as one can never tell which lead may turn out to be very profitable. Exploration by a competent man will be far better than random, of course. But the higher officials of the company must realize that good research takes time, and not demand immediate results. The opposite extreme was of one industrial-relations executive who came down late one afternoon to announce that he had finally convinced the board of directors that a testing program should be undertaken. Finally he said in triumph, "Now I want you to start testing tomorrow morning!"—without any thought that jobs must be surveyed, appropriate tests selected or even devised, and the new procedures validated.

II. Absenteeism—a Sample Research Program

To illustrate how research in industrial relations is set up and conducted, let us look over in some detail one typical problem which had been undertaken by a number of companies, that of absenteeism. In wartime especially manpower becomes short, and absences from work are unusually serious on productive efficiency. Before we can attempt to reduce unjustified absenteeism, our first task is to obtain tangible information about it. How many are likely to be absent on any given day? Are there trends, by days of week, shifts, or with relation to payday? Are some employees chronic absentees? What are the reasons? Having found facts and reasons, what can be done about them in a constructive way to eliminate unnecessary absences?

Absenteeism represents loss of scheduled working time, regardless of whether it is unavoidable or capricious, and consequently

also loss of expected production. It has always been a source of some worry, but in recent wartime it attracted much more publicity than formerly. Absenteeism is serious even when there is an ample supply of labor, because supervisors cannot count on how many or just which employees will report for work on a given day. In a southern cotton mill it was necessary to carry more than 300 on the payroll to ensure that approximately 100 would appear on any given day. The effects are naturally worse when manpower is short, since there are simply no replacements to call out for those who fail to appear. Absence of a skilled man causes more interruption to production than if a laborer does not report.

To illustrate further what absenteeism involves, let us use the hypothetical case of a large company which employs 10,000. With 5 per cent absenteeism it means that there must be at least 500 extra names on the payroll to ensure that full production is kept up, and perhaps as many as 1000 extra to compensate for days following payday or other days of poor attendance. These numbers alone would staff a fair-sized mill.

Only by means of definite facts and statistics can the true causes of absenteeism be found. The Carnegie Illinois Steel Corporation conducted such a large-scale continuous survey in each department of its 20 plants, encompassing 100,000 employees. Thus management could tell whether a certain department or a certain mill was showing favorable trends.

The general procedure followed was this: when the employee returned to work after missing a whole or part of a day he was interviewed by his foreman, and an attempt was made to ascertain as accurately as possible the reason for the absence. A certain amount of error undoubtedly creeps in, as it is hard to prove whether an employee was genuinely ill or was using it as an excuse for going hunting or to a ball game, or whether a funeral was of a dear friend or close relative or of one merely casually known. However, assignment of causes seems to be highly accurate, since the same departments and same mills show the same trends in one two-week period after another. Faking could not be done with such consistency throughout a corporation of 100,000.

The foreman checked reasons according to the following list:

I. Unavoidable causes:
   1. *Illness or accident,* if genuinely serious enough to necessitate employee staying home.
   2. *Transportation breakdown or civic duty.*

II. Avoidable causes:
   3. *Personal affairs,* which could have been done by another member of the family or by the employee at another time.
   4. *Indifference:* lazy, little need of extra money, transportation inconvenient, oversleeping, flimsy illness excuse.
   5. *Recreation:* hunting, fishing, sports, shows, club affairs.
   6. *Strike* or work stoppage.

Each department within each plant submits its summary to the plant industrial-relations office, which in turn makes plant totals and forwards them to the general office in Pittsburgh. That office then prepares and issues a company-wide report every two weeks, coincident with the biweekly pay period, and lists for each of the 20 plants, for the Pittsburgh and Chicago districts, and for the entire company the following figures: total hours scheduled, hours missed, and both total cases and total hours missed under each of the six major causes of absenteeism.

Through these statistics one can ascertain whether the general rate is accelerating or decelerating, whether there is a detectable trend in any of the six major causes, and whether individual plants might be showing an upward trend. Here are several typical findings. Early in 1943 the corporation-wide averages were around 2.50 per cent; with introduction of the 48-hour week it rose to 2.75 per cent, due either to progressive fatigue or boredom from working six days a week; as the war continued there was a gradual trend upward to around 3.50 per cent. This figure is definitely better than an estimated nation-wide average for all industries of about 6 per cent.

Divided into working departments, absenteeism ranged higher in those where there was a great deal of exposure to weather or heat from manufacturing processes. Coke works, dirty places to work, and staffed mostly by Negroes, had an excessively high rate. Such trends do not always obtain, however, as rates on similar operations in two mills may vary considerably, suggesting a factor

of morale as well as working conditions as such. In fact, absenteeism has been taken as one of the best indices of morale.

Absenteeism is much higher the day or two following payday, on Christmas or New Year's, during hunting or fishing season, after snowstorms, and of course during an influenza epidemic. There is more on the evening than day shift, and still more on the night turn. This latter trend is even more pronounced in industries which in normal times run only a day shift than in those in which, such as the steel industry, each employee has become accustomed from his first day of employment to taking turns by rotation.

Causes of absenteeism are manifold, but in general they may be grouped into the six main classes listed above, which were drawn up after considerable study of other companies and preliminary surveys in one Carnegie Illinois plant. About half of absences from scheduled work are avoidable. When we eliminate those causes for which we cannot blame the employee—illness of self or member of family, flood or blizzard, pressing personal business, dentist visit if it cannot be arranged outside of working hours—we still find an industry-wide rate of about 3 per cent. During the war we heard a good deal about greater number of hours of work as producing higher absenteeism. There no doubt were greater fatigue and even illness, but boredom and much increased earnings were probably more important factors in this increasing rate. Even in England, in constant peril, a 55-hour week was found to be accompanied by double the normal absenteeism. The strongest motive—self-preservation—could not furnish incentive for continual seven days' work and excessive overtime; the breaking point is reached sooner or later. In this country the writer is convinced that a point of indifference, rather than fatigue, was reached. Higher earnings, including time and a half for the sixth day, likewise produced indifference, especially to those who had been in lower income brackets heretofore.

Women, especially married, show a high rate of absenteeism. One survey showed rates of 4.1 per cent for men, 6.8 per cent for single women, and 11.5 per cent for married women. Some of this is due to reluctance on the part of married women to work other than the day shift. Married women often take Saturday off to clean house and prepare for the week end. In the writer's opinion

we should not blame women but rather we should realistically face the fact that a day for keeping up the house is necessary, and that these women are doing double duty. Hence we should not attempt to schedule married women for a six-day week if they request five days.

Reduction of absenteeism is apart from the discussion of this typical research problem, so we shall merely list a few suggestions. The mere interview by the foreman has material effect in that it shows the worker that his absence is noted and the company thinks his services are important. Medical examinations detect faked illnesses, as well as embarrassing the bluffer. Sarcastic and public postings of lists of yesterday's absentees have not worked out well, and create more embarrassment and resentment than benefit. Telegrams sent to the missing employee's home have the same effect. Further, one must be careful or he may offend an employee who is simply unable to work. A foreman gave a tongue lashing to an employee whom he thought to have been absent for no good reason, only to find out that his mother had died two days before. Too rough treatment may lead employees to report for work when they are too ill, and result in aggravating the illness. But faked illnesses are often detected. Supervisors are familiar with the friend who calls in to report off for Joe, and hearing a juke box and other sounds of revelry in the background.

Keeping records also shows up the chronic absentees, and one can use a clinical approach and a thorough interview to diagnose and see if one can help him straighten things out.

Management can contribute its share by watching out for and building up workers' health, keeping working conditions as satisfactory as possible, and by making its supervisory tactics as fair and friendly as reasonable. Absenteeism, like accidents, cannot be entirely eliminated, but it can be cut at least in half, and that should be the minimal goal of every company.

III. Research Problems

To illustrate a variety of industrial-relations research problems, we list below in skeleton form a few of the endless numbers of *topics on which valuable research may be conducted.*

Let us emphasize that this is only a partial list, and that any given organization will have many special problems of its own which it will need to study. To list possible problems of research is merely to enumerate all personnel practices and problems, and then suggest studies and other ways of gathering evidence which will demonstrate their validity and will disclose means of improving each of these devices.

The research division need not go out of its way to look for possible research problems. Important problems constantly arise, such as union demands, on which one must be prepared to obtain data and make recommendations.

1. Recruiting methods: check how each applicant was attracted to the company, the quality of each, the rate of turnover of those coming from agencies, labor organizations, friends or relatives, or attracted by advertisements.

2. Improved selection methods: constant check on personnel techniques, such as tests, interview methods, items on the application-blank.

3. Efficacy of training programs, with comparisons of different types toward subsequent employee efficiency and duration of employment of those introduced by various techniques.

4. Handicapped: survey of jobs they can do, special training methods necessary, special precautions and working conditions.

5. Women: survey of jobs they can do, special problems in handling and supervising, safety and health precautions, hours of work.

6. Merit rating: check on accuracy of hiring methods through follow-up, improving promotional techniques, measuring progress of each employee.

7. Working conditions, such as fatigue, noise, monotony, rest periods, ventilation and humidity, distractions.

8. Motivation, associated with pay rates and methods, supervisory practices, morale.

9. Attitude studies, on company policies and practices, supervision, wages, promotions, seniority.

10. Accidents: situations, types of workers involved, analysis of causation, proneness, remedies.

11. Study of turnover, partly through exit interview, to determine where selection, training, and labor-relations programs are breaking down.

12. Study of personality adjustment, the problem employee, and mental-hygiene difficulties of industrial workers.

13. Sales methods and selection of salesmen.

14. Preparation of company manuals, such as rules and regulations, supervisor's rule book, condensed policy manual, safety regulations, induction manual for new employees.

15. Maintain a research library, preferably for the entire company, which will have articles and data available to staff members, and will have facilities for obtaining outside information.

16. Act as a clearing house for industrial-relations information.

17. Keep on file records of national and local labor trends, labor legislation, union demands, and all data which may be useful in assisting anyone in the department, or executives in other departments, to handle problems as they arise.

18. Keep track of practices of competing companies, in the same field or same locality, so one's own organization will maintain itself abreast of the times.

IV. Policies and Procedures

Quite commonly when an industrial-relations department is organized into a number of divisions, such as we have assumed throughout our discussion, the research division is charged with *preparation, issuance, and revision of policies and procedures for* the entire department.

A policy may be defined as a statement of the general way or purpose of handling a certain broad situation, whereas a procedure is the detailed method of handling the working of a program, sometimes a formal policy.

Samples of company policies are such as these: (1) All employees shall be retired at age of 65. (2) All employees who have one year's continuous service shall be eligible for a week's vacation, and after three years shall be eligible for two weeks' vacation with pay. (3) Employees on military leave shall be entitled to their former position for one year, provided they apply to the company for reinstatement within 40 days after discharge. (4) Overtime pay rates

(time and a half) will be paid for a sixth consecutive day of work, but not for working Saturday or Sunday as such. (5) Continuity of service shall be broken immediately if an employee voluntarily resigns; after six months if he is discharged, terminated, or on leave of absence; and after two years' absence due to layoff because of lack of work or disability.

Usually a procedure must accompany any such policy, so that the policy may be put into effect. (A procedure may also exist alone, as seen in the instructions for reporting and computing absenteeism; there can be no policy on this subject beyond a generalized statement that consistent unjustified absenteeism shall be grounds for discharge.) Let us illustrate a procedure. We need to specify how an employee eligible for vacation shall be scheduled and compensated. With a salaried employee monthly pay simply continues, but one who is paid on an hourly basis has variable earnings because he may have worked overtime or may have missed some work during the last pay period, and further he may be on an incentive rate which will vary from one pay period to the next. So it may be specified that vacation pay shall be calculated as the average of the first two of the last three closed and calculated pay periods prior to the first day of his designated vacation. The reason the last pay period is excluded is that calculation of pay for those on hourly and incentive rates is complex and it takes some time for records to be turned in and pay computed. In addition the procedure must specify when supervisors shall start drawing up the vacation schedule, when the employee can collect his vacation pay, and to which office he shall report.

It must be clearly understood that the research staff does not issue these policies and procedures solely on its own initiative and imagination. Usually a policy is prepared when a need for a definite company statement appears; a situation has arisen so often that individual handling has become unsatisfactory. Further, different supervisors may be inconsistent with each other, and the same individual may vary from time to time. A consistent policy actually protects the supervisor against charges of favoritism or harshness, and saves embarrassment when it is necessary to deny an employee's request.

Actually, when need for preparation of a policy on a given

topic is apparent, the research staff will commence by investigating into practices in the offices and manufacturing units of the company. These set a sort of precedent from which one may not wish to depart too drastically right away. Next, practices of other companies are studied. Third, the opinions of line and staff executives of units which will be most affected and whose judgments should be most sound will be requested.

Then the proposed policy may be drawn up, but it is still in the embryo stage until proper clearance has been gained. Clearance means the assent and approval of all groups affected in an administrative way: other divisions of industrial relations, other departments within the company, and perhaps the legal staff to make sure no conflict will occur with state or federal provisions. In the vacation plan we have been discussing we will obviously need clearance by the finance department, since a change of policy may mean additional payroll cost, and also the calculations will have to be done by the staff of this department. The law department will have to verify the proposals from standpoints of the labor agreement and actual law. A vacation means pay without working during that week or two, which is sometimes construed as a raise in pay, and at least during the recent war any change needed approval by the War Labor Board.

Finally, a policy and procedure once issued cannot be forgotten. It may have "bugs" which need straightening out, especially in the procedure, where clarifications or amplification may be necessary as queries about exact interpretation arise. One might say that the fewer such inquiries he receives after issuing such a procedure the better job he has done in writing it. Also, conditions may change so that revision or even complete rewriting of the policy and procedure may be necessary.

PART IV

ADVERTISING AND SELLING

CHAPTER XXI

INTRODUCTION TO ADVERTISING

I. Definition and Purpose of Advertising

Advertising and salesmanship are both methods of selling. Advertising may be defined as publicity which calls attention to the existence and merits of certain goods or services. Salesmanship is the act of persuading the potential customer to buy goods or services. These definitions differ little. The chief distinction between the two fields is in the means each employs.

Salesmanship uses person-to-person contact, while advertising uses the impersonal printed page or radio. The salesman, then, can adapt his arguments to the individual customer, while the advertiser has to use a "shotgun" argument and stick to it. If one is a store salesman he can assume that one who comes into his store is at least somewhat interested in the product, while the advertiser has to arouse this interest. Readers of a magazine or newspaper, or radio listeners, are seeking entertainment, the store customer not. This difference does not exist, however, with the insurance, wholesale, or door-to-door salesman, who must arouse interest just as does the advertiser. Finally, the salesman in a store usually has several equivalent brands, such as shoes or cereals, while the advertiser usually is publicizing one or more products of a single manufacturer. A store ad in a local paper more resembles the salesman's situation in this respect.

Advertising may take any one of several forms, as listed in Table 56. One is advertising when he puts a sign in front of his house to rent a vacant room or garage, when he arranges a display

TABLE 56. Different Types of Advertising

1. Magazine, general
2. Magazine, technical
3. Newspaper
4. Radio
5. Billboard, poster, sign
6. Streetcar card
7. Theater advertising: program, slides, film
8. Electric sign
9. Mail circular or individual letter
10. Handbill
11. Catalogue
12. Sample, souvenir
13. Standard package or wrapper
14. Voice: newsboy, loud-speaker, auctioneer
15. Institutional: government, a locality, an industry

in his store window, when he uses a billboard or electric sign, and when he speaks over the radio, as well as when he places an ad in a magazine or newspaper. We shall deal principally with the latter two types, although we shall discuss several of the others briefly in Chapter XXIV.

II. History and Development of Advertising

One may readily imagine how advertising must have originated during the development of human civilization. In very primitive times man had to satisfy all his wants; he did everything from hunting and raising crops to making his own tools and clothing. It was soon observed that one man was a better hunter and a second better at making the weapons for the hunt. So one spent all his time making weapons, the second specialized in hunting, and they shared the kill. A third man might offer to grow vegetables for both. So community interaction began.

But one man's fame as a toolmaker spread, and it seemed to him that he could profitably spend all his time making implements. But as he became more proficient he made even more goods than his friends could absorb, so he thought of disposing of his surplus to strangers. This called for both money and publicity. The first advertising was of necessity by word of mouth. But this

is limited to the range of one's voice on top of walking distance. So writing, and later printing and economical transportation, became necessary. The printed sign in front of one's shop or on a billboard is working every minute of the day for the benefit of every passerby, regardless of whether the owner is working or even sleeping. Newspaper, magazine, and radio advertising is often carried to an audience of a million or more.

But to achieve this result three developments outside the field of advertising had to take place: (1) Literacy had to become common. We take this for granted today, but one must remember that even a hundred years ago only a small percentage could read. (2) Printing had to develop before any widespread audience could be reached. (3) Transportation had to develop so that printed material and goods could be distributed rapidly all over the country. We think of present advertising and distribution as being nation- and even world-wide in scope.

Advertising as we think of it—including full-page ads in several colors—is only fifty or fewer years old, and even a quarter-page black and white was not seen until after the Civil War. Let us now list twelve important steps, more or less in chronological order:

1. *Telling friends* was undoubtedly the first form of advertising. This is purely personal and so is limited in scope.

2. *Public announcements* constituted the next stage. One called out his wares or hired a person to cry out announcements around town. It is said that in the Middle Ages the town crier who acted as watchman, timekeeper, and public announcer, could be bribed to intersperse among his official bulletins remarks about the excellence of wine or goods to be obtained at a certain shop. At the present time we see this method in newsboys barking out extras, sideshow barkers, automobiles with loud-speakers disturbing the peace of residential districts, and silent "sandwich men."

3. *Billboards* were an early development, necessarily, in the absence of printing, and since any written announcement could not be duplicated many times. Excavations of ruins of ancient Pompeii (79 B.C.) have disclosed signs painted on sides of buildings advertising baths and theatrical entertainments. Posters on buildings characterized early English advertising also.

4. *Newspaper announcements:* The earliest papers were for news only, but it is easy to see how slight is the transition to commercial announcements. The visit of a wholesaler buyer to an agricultural center or an optician to a small town is of personal as well as professional interest. Our laws require such items interspersed among news items to be marked "Adv."

At this early date it was considered sufficient, simply to let the reader know that one had goods to sell. A ship had arrived carrying a cargo of silks or spices, or was sailing for America and would carry passengers. There was no glorifying description or claim of better service. Today's parallel is found in classified sections of local papers and telephone books.

5. *Evaluative adjectives* crept in when advertising became frequent enough so that there was competition for interest among the various announcements. As judged by present standards the first descriptions were very conservative and mild. Around 1800 we find such terms as rare, new, elegant, striking, favorite, satisfactory. Then started the era of superlatives. P. T. Barnum is given credit for this, about 1840. Perhaps others had used flowing language, but probably not so extravagantly. Barnum's circus was, by his own assertion, "the most refined, elegant, greatest, grandest, and most magnificent circus ever organized."

Perhaps modern superlatives are a little more subtle, but scarcely less far reaching, as seen in the following ad.

"One look at that graceful beauty, that massive glistening front grill, those flowing lines and you'll see Mercury has more style—style you grow to like more every time you see it.

"Sit in it and you'll see Mercury gives you more roomy, big car comfort. You'll admire its beautifully tailored two-tone interior with a perfection of detail that's proof of superior craftsmanship throughout. And *you'll notice, too, that there's more vision in all directions. Drive it.* You'll thrill to its power—to its almost magic responsiveness to wheel and brake."

6. *Use of several columns:* About the same time as the first use of adjectives, we find the strict column setup of a newspaper first broken down (1850). Some advertisers wished the extra attention a double-column notice or a quarter-page block would give them,

but had previously met with refusal on the part of the publishers to violate custom.

One might surmise that this development meant that the ad was no more a sort of news item and only an incidental source of income, but now the paper or magazine became virtually subsidized by advertising.

7. *Illustrations* had precursors around 1750, but these were more in the form of pictorial representation, somewhat like our present trade marks. Inns and stores used signs over their doors, with either standard symbols, as our striped barber pole or three gilt balls for pawn shops, or actual models of objects, such as a large wooden boot for a shoemaker or a mortar and pestle for an apothecary's shop. These enabled identification from a distance and assisted the illiterate. When these same concerns started to advertise it was logical that they would continue to use the same symbols to provide further identification for their ads.

But it was not until around 1850 that there arose much use of realistic depiction, and even then the number so illustrated was only a small fraction of those seen in 1900 and thereafter. Also individual pictures arose, in contrast to a generalized picture, such as a whole column of advertisements of ships with the same cut of a sailing vessel at the heading of each.

8. *Color* came in about 1890. Again it was a response to the need for making one advertisement attract the reader's attention over others. *Color also assists in depicting more realistically the goods* displayed.

9. *Personal appeals* came in also around 1890. Previously the impersonal had been used; it had been considered presumptive and indelicate to word other than impersonally. But the ad is more effective if it directs the reader's attention to use of the product by himself, and not just in a general way. So we see headlines of the imperative, suggestive, and "you" types. Insurance and health ads are outstanding examples of use of such personal appeals.

10. *Argumentative advertising* came in just before 1900, and may be considered the last innovation in the formation of our present general advertising form. The first ads, we have seen, were simple announcements. Then we had an era of superlatives and

unrestrained adjectival descriptions. Finally, advertisers began to show "reasons why" their article was to be preferred over others, by quoting figures, specifications, comparisons, and other objective facts.

11. *Agencies* came into being when advertising developed to such a state that its composition demanded special competence and the size of budgets made it clear that amateur inspiration would no longer suffice. Colleges and business schools give courses to prepare one for an advertising career, as for an industrial-relations career. Also, a principal function of an agency is to secure good space in a magazine or newspaper for its clients.

12. *Honesty:* One advertiser said, "Truth is not merely advisable, it is essential." Up to the last decade or two the emphasis had been merely upon getting the customer's dollar, regardless of possible ill will that might follow. But editors began to realize that unscrupulous advertising would harm the reputation of their journals, and they refused to accept advertising from some of the worst offenders. State laws compel merchants to stay within certain limits of the truth, at least. Better-business bureaus operate aggressively against the unscrupulous person, who while he may be breaking no law is engaged in shady practices. Perhaps perfect honesty will never be attained, but there is no doubt that the situation today is pretty well under control.

III. The Pros and Cons of Advertising

Advertising is omnipresent. When one reads a newspaper or magazine, drives along a highway, or listens to the radio, he is constantly bombarded with publicity for this or that. Because of this omnipresence and because of the huge amount of money spent on advertising, there is bound to be a lot of controversy as to its desirability. While few would seriously advocate withdrawing all publicity, any more than they would abolish all store salesmen, some modifications or restrictions might be desirable.

A. Expense

In a recent year 3 manufacturers spent over $10,000,000 in national advertising, and 12 more spent over $5,000,000. It is esti-

mated that over $2,000,000,000 are spent in newspaper, magazine, billboard, radio, and direct-mail advertising in any given year. Is this huge sum justified? This is answered in two ways. Failure to advertise has been known to ruin an established business, where management has decided that its reputation had been made permanently and that it could now save its advertising cost. People forget very quickly, and advertising is necessary to retain as well as to open up the market. Even old and faithful customers gradually turn to more aggressive competitors. They also point out that businessmen are hard-headed, constantly scrutinize costs and earnings, and any breach of the business which is not pulling its share of the load will be dropped.

B. Does Advertising Raise Prices?

It is probable that advertising budgets run between 2 and 10 per cent of the total cost to the ultimate consumer. Yet this is far less than the mark-up by the retail store or the wholesale distributor. Those concerns which devote the higher percentages to advertising are in general those dealing in luxury articles: toilet articles, jewelry, cameras, etc. Automobile advertising is also expensive, because of the intense competition and minor differences between one make and another. It is estimated that about $100 of the cost of a new car can be charged to advertising.

Printer's Ink, a professional advertising journal, made a survey among its clients, and not a single company admitted that it had *to raise prices because of their advertising campaigns, and the* great majority claimed to have increased their volume so that they could lower prices. Remember that these assertions are claims by the advertisers themselves, not by any outside group of neutral investigators.

Advertisers further claim that without national publicity large-scale manufacturing and distribution would not be possible, and in the long run advertising keeps prices lower. The reader may be horrified to learn that a double-page spread in color in the *Saturday Evening Post* costs around $20,000 for a single issue. But he might recall also that this journal reaches 3,000,000 readers, which makes the cost less than a penny a potential buyer.

C. Advertising Budgets Could Be Reduced

Granted, some critics say, that advertising is necessary to publicize a product and to give its manufacturer large-scale possibilities, it has grown all out of proportion to its need. Like hostesses competing for social leadership by throwing more and more luxurious parties, advertisers have to buy more and more space, use more and more media, and insert more and more frequently, to keep up with competitors. Perhaps if each agreed to reduce his budget to half of last year's, the price to the consumer could be cut materially. The writer feels that such a program would reduce the price of automobiles by as much as $50, and just as many cars would be sold. Advertising in this field is not to sell cars, but to sell one make exclusively and to lure customers away from competitors.

D. Publicity Is Necessary

The familiar quotation "If you build a better mousetrap than your neighbor, the world will make a beaten path to your door" may contain a spark of truth, but people beyond your limited community will not hear of your excellent mousetrap. You must use some form of publicity.

Further, publicity gives information and enables comparisons. Since several manufacturers and stores advertise simultaneously, the customer can compare brands, specifications, and prices. This factor may help to keep the manufacturer in line as to price and quality.

The man in the market for something can find out who manufactures and sells that item. Advertising in this case is essential to the customer as an information agency as well as a sales stimulator. A large mail-order catalogue, of the Sears Roebuck or Montgomery Ward nature, can virtually take its place on the bookshelf along with an encyclopaedia set. It might also be remarked that some magazines, particularly those for women, those centering about homes and gardens, outdoor magazines for men, and many trade journals, are bought more for their advertising than for their articles.

E. Are Monopolies Created?

That monopolies are created is the charge of some opponents of advertising in its present form. It is charged that smaller companies cannot afford to embark on large-scale campaigns, and so they fade out of the picture, with the result that a few large organizations remain, which have the customer at their mercy as to price and quality. As usual, evidence on both sides can be presented. The Eastman Kodak Company, which has had a virtual American monopoly, has steadily increased quality and decreased prices. Yet, when basic patents on radio tubes expired, prices went down almost instantly from around $6 for a standard amplifier tube to less than $1. We must emphasize, however, that such business practices cannot be laid at the doorstep of the advertiser exclusively—perhaps not even partially.

F. Standard Packages and Trademarked Goods Raise Prices

Instead of paying for goods by weight alone, as from the old cracker or sugar barrel in the country store, it is claimed that we have to pay a great deal extra for the fancy wrappings and labels which identify the goods as those advertised. Manufacturers' claim that this cost is slight, and that standard packages make for constant quality and sanitary merchandise. But it might be rebutted that these claims are based more upon repetition than upon direct proof. A pretty package which triples the price does not necessarily guarantee uniform quality or better goods.

G. Standard of Living Is Increased

Because advertising has made large-scale business possible, and thus lowered prices (granted this is so), each person can get more for his money, spend less for essentials, and have more left over for luxuries.

Opponents sometimes argue that advertising is made so appealing that people are persuaded to buy things they cannot afford and don't really need. To subscribe to this argument, however, would be to set up a guardian for those with low sales resistance;

and to be consistent we would have to outlaw all advertising, sales talks, and attractive display windows, and let the world discover the "better mousetrap."

H. Some Advertising Is Untruthful, Distasteful, or Used for Dishonest Ends

Fraud is sometimes perpetrated by printed advertising, just as it is by confidence men in person or by salesmen at fake "auctions." Some is distasteful, especially of the bad breath and body-odor type. And some mail-order ads, particularly in the Sunday supplements, are downright dishonest. But there are controls, not only by actual laws, but by radio stations and newspaper and magazine publishers wishing to preserve their reputations, by better-business bureaus, and by public knowledge. Advertising is usually a continuing business, and to continue it must be both effective and reasonably honest.

I. Newspapers and Magazines Are Made Cheaper

Since papers and popular magazines often are more than 50 per cent advertising, the news columns and articles are literally subsidized by commercial interests. While this is hardly the place to initiate a controversy, the writer would suggest that there is no objection to such subsidy if the advertisers do not attempt to censor the news or dictate the editorial policy—although such attempts have occurred in the past. Even the most vehement opponent of advertising should be comforted when he recalls that without it his daily newspaper would probably cost a quarter and his weekly magazine a half dollar. And his radio would have poorer programs, less wide choice of attractions, unpredictable schedules, and he would have to pay a license fee to the government—all of which happens in many European countries.

IV. Essentials of the Good Advertisement

Since an advertisement costs a good deal of money, it must justify itself in the additional sales produced. It must be seen, be read, convince, and lead to action. It must satisfy the following five important functions:

1. ATTRACT ATTENTION. It must be so designed that it catches the reader's eye. Attention is largely gained through the illustration, color, and headline.

2. AROUSE INTEREST. After the advertisement catches the eye, it must have sufficient stimulating value so that one reads the printed matter. Attention may be gained by a brilliant flash of color, but if there is nothing more interesting the reader will pass on after one glance. Interest is aroused chiefly by the wording of the headline or by a startling illustration.

3. PRODUCE CONVICTION. The reader must next be convinced that the article described is the most suitable for his needs and ability to pay. This is achieved primarily by the text, although an excellent illustration or an informatory headline may serve to convince the average reader.

4. IMPRESS THE MEMORY. Since one does not ordinarily rush right out and purchase the article, the advertisement must be such that the reader remembers the product described and tends to ask for it the next time he needs an article of that type. If it is simply novel or amusing one will soon forget which product was advertised, so the instrument fails in its purpose. Because of this, because memory fades with time, and because enthusiasm dies out even more rapidly, advertisers must design their copy to bring immediate results.

5. PRODUCE ACTION, OR SALES. This is the final test of an advertisement. No matter how alluring, how interesting, or how convincing it may be, it will fail of its purpose if it does not increase sales.

Which of these five functions is most important? This question comes up naturally, but it cannot be answered summarily, any more than we could say whether the heart, lungs, or brain is the most important organ. Without all functioning we would die. Without all five "musts" fulfilled the advertisement is worthless. The order in which we listed them here is chronological, in the order which the customer follows in his process of reading the ad and eventually purchasing the article. Obviously, if the advertisement is in a publication he does not see or if it does not draw his attention the rest will do no good, no matter how potent the

appeals and arguments may be. If it does not interest him enough so that he peruses the whole ad, the article will usually remain unsold. We can go through the rest of the points in this manner. All five functions must be fulfilled.

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CHAPTER XXII

APPEALS IN ADVERTISING

I. Introduction

A large share of human behavior is initiated by wants, desires, hopes, and ambitions. To sell a person anything we must appeal to him so that he will be motivated to buy our product or from our store. We may originate the appeal, but it must be transferred to the potential customer and become part of his own internal motivation before the advertisement can fulfill its purpose.

It is in the field of appeals that psychology can contribute the most of a practical nature to advertising. It can suggest what are the strong human motives, what ones will be appropriate for this or that product and for this or that individual or group of individuals. In sequence, we must first recognize the dominant motives, and then tie up these motives to some feature of the product. The advertisement is then built up to be attention-compelling, attractive, and convincing.

We quote in Table 57 a slightly modified list from Lucas and Benson (2), of personal appeals which can be used in advertising. We wish to call special attention to the words "can be," since not every motive which is of importance in human life can be used successfully in advertising. Some may work well for labor supervision, or for personal salesmanship, or for missionary work, or for a teacher to make children study their lessons, or for military purposes, but would be entirely ineffective for making a person part with his money after incidental reading of a printed appeal.

Furthermore, those appeals which are of proven value for advertising cannot be applied indiscriminately to sell any product:

TABLE 57. Possible Subjects for Personal Appeals

A. Individual
   1. Appetite, taste
   2. Success, power
   3. Possession
   4. Wealth, independence
   5. Beauty, appearance
   6. Cleanliness
   7. Health
   8. Comfort, security
   9. Play, travel
   10. Fear, avoidance
   11. Curiosity

B. Social
   1. Popularity, fear of not being popular
   2. Sex, mating, parental
   3. Rivalry
   4. Domination, submission
   5. Conformity, distinction
   6. Sociability, hospitality
   7. Cooperation, altruism

Food and automobiles each may be advertised by a variety of appeals, but it would rarely be appropriate to aim at the same motive in selling both.

These remarks must be emphasized strongly and taken seriously by the reader because in writings on the subject of adveritising, if not necessarily in the creation of actual advertisements, it seems to have been assumed for many years that an appeal is an appeal, without qualification or individual analysis. Because sex and hunger are two strong human motives, should we attempt to tie them up to everything from printing presses to safety pins? To be ridiculous by way of driving home the point, if one should find that religion is a strong motivating force in most people, he most certainly would not use it to sell whiskey, nor would he use cleanliness, which would be perfectly suitable for foods, in a farm-machinery catalogue as an appeal for a manure spreader.

A final recommendation before looking into appeals more specifically is that originality is essential in an advertiser. There has

no doubt been too much reliance on matching what seemed to be the strongest human motives with what seemed to be the most logical appeal for the product in question. The result has been that advertiser after advertiser comes up with the same answer, and many ads appear in virtually identical form. As the head of one advertising agency said: "Nowadays it is hard to tell one liquor ad from another. . . . Cigarette copy has become a string of repeated inanities preceded by the word 'Yes.' A food ad just isn't *comme il faut* unless it has the whole family—Mama, Papa, and Junior—doing handsprings over a new dish. . . ."

Similarities are constantly noted in headlines attempting to tie up articles with Mother's Day, Valentine's Day, current movie hits, or a recent snowfall or 100-degree temperature, all cutely worded in up-to-date slang. Someone was original, several seized upon and paraphrased the idea, but after that the repetition becomes a drug on the market. We realize that it is much easier to preach than to achieve originality. The search for ideas is undeniably tough. One becomes desperate for a new idea, and begins to feel as if there were just so many ideas possible in the merchandising world and that each of them had been used *ad nauseam*. After searching for a while one finds it virtually impossible to get out of the groove. As an agency executive said, "You know, what we need is someone who isn't stale on this thing."

How can one find original ideas? Start with the product. Learn about it. Learn *all* about it. Learn its uses. Learn who buys it, and *why*. *What do they do with it? We shall discuss and emphasize* these points over and over again when we come to our discussions of salesmanship in Chapter XXV. But it has been pointed out many times that the advertiser tends to confine himself to his "ivory towers," his office away from the hustle and bustle of the sales floor. He thinks of himself as an "idea man," who shouldn't be restricted to such crass details as facts. In fact, the present writer has heard advertisers belligerently pride themselves about how little they knew about the product they were attempting to advertise, because such knowledge would spoil their originality.

The writer cannot subscribe to these arguments. True, originality is wanted, but as in a classroom examination, there is a definite distinction between bluffing from ignorance and originality tem-

pered with knowledge. The best advertisers find out who buys the product, what they use it for, why some buy a competitor's brand, what faults they find with either brand, and why still others don't buy that type of goods at all. Then we can aim our advertising at the market, play up possible uses of the product, correct faults in the merchandise (a manufacturing problem, but one which stems from advertising research), and gradually attempt to expand the market.

This is why the advertiser is urged to study the product from all angles, following instructions we give the salesman in Chapter XXV. One of the best ways to acquire pertinent information is actually to sell the product. An advertisement which will be given a fairly wide distribution will cost a good deal of money, and a few days of time spent selling the goods will represent an infinitesimal portion of the total expenditure, and will prove to be time well spent. Many ideas will present themselves, and out of them perhaps one entirely new.

II. Analysis of Product

Having made a thorough study of the product in action, one can list a large number of possible appeals. The following outline gives a suggestion of the fields from which such ideas may be drawn.

Table 58. Possible Selling Points for a Commodity (8)

I. Raw material from which it is made
   1. Source of the raw material
   2. History; origin
   3. Selection
   4. Quality

II. The process of manufacture
   1. How the commodity is produced
   2. Special processes
   3. Special equipment; machinery
   4. Skilled workmanship
   5. Research in production of article
   6. Sanitary conditions of manufacture
   7. Size of factory and business

TABLE 58. Possible Selling Points for a Commodity (*Cont.*)

8. Age, experience, and reputation of firm as a sign of skill and reliability
9. History of process
10. Guaranteed quality and construction

III. The finished product; qualities and uses
1. Special mechanical features of the finished product
2. Its possible impression through the various senses
   a. Eye: appearance, shape, color
   b. Ear: sound
   c. Touch, taste, smell, motion, etc.
3. Varieties of uses and specifications for uses
4. Efficiency and thoroughness in accomplishing its uses
5. Wide usage
6. Frequency of use
7. Class of people using the product
8. Testimonials of users
9. Testimonials of authorities
10. Convenience in use
11. Ease of operation
12. Effects of using the article
13. Pleasure in using the article
14. Guarantee of satisfactory use
15. The package, its convenience and appearance
16. Repair service

IV. Price and value of the finished product
1. Price compared with competing articles
2. Price in relation to quantity and quality of article
3. Economy in time, labor, and convenience
4. Cheapness of operating the article
5. Durability

A concrete illustration of tying possible appeal to the product and its uses is seen in Table 59.

Allen (*1*) prepared the list in Table 60, taking the problem from a slightly different angle.

It will of course be appreciated that such approaches as presented in Tables 59 and 60 are only suggestive, and furthermore that they serve only as starting points. One can use those approaches, but there is no substitute in the end for imagination

TABLE 59. Appeals Tied in with Product Benefits (2, p. 160)

Appeal (to)	*Desire or Need (Through)*	*Product Benefits*
Material gain	Profit	Economy
Romance	Admiration of opposite sex	Beautification
Health	Power	Energy
Safety	Self-preservation	Protection
Emulation	Social admiration	Authority
Comfort	Ease	Convenience
Sensory pleasure	Satisfaction	Sensation
Curiosity	Knowledge	Information
Domestic happiness	Affection	Opportunity to express happiness

TABLE 60. General and Specific Appeals

Primary Wants	*Appeals to Primary Wants*
1. Appetizing food	Enjoy tastes, smells, sights, nourishment of food. "Meat on the Table"
2. Thirst-quenching drinks	Enjoy tastes and other refreshing qualities. "The Pause That Refreshes"
3. Comfortable surroundings	Enjoyment of a better standard of living. "See the Kitchen *Good Housekeeping* Likes"
4. Escape from pain and danger	Basis for all negative appeal; prevention and remedy. "Feel That Knot of Pain Fade Away"
5. Sex companionship	Attractiveness to the other sex; romance. "Cigar Needn't Interfere with Kisses"
6. Welfare of loved ones	The basis of insurance copy: noblesse oblige. "My Daddy's Smart"
7. Social approval	Enjoy the admiration of others; prestige. "Now That's What I Call Good Coffee"
8. Superiority over others	Satisfaction in excelling, socially in most cases. "How to Win Friends and Influence People"
9. Master over obstacles	Satisfaction of ambitions; "will to power." "Are You 'Flying Blind'?" (I. C. S.)
10. Play	Basis for travel, sports, and hobbies copy. "Winter Sports and Winter Sportswear"

or originality. Their main usefulness is to serve as a check, to help make sure that no worth-while possibilities are left untouched.

Continuing the search for concrete appeals, in Table 61 we quote a list of quite a number suggested as possible motives for buying a vacuum cleaner. Note that these deal with uses, operation, economy, dependability, and servicing. These appeals should be scrutinized in terms of probable customers, strength and relevance of each appeal, and the frequency each appeal would apply.

TABLE 61. Possible Appeals for Vacuum Cleaner (*8*)

Simplicity of operation	Freshens color of rugs
Mechanical construction	Dealer's service
Contains revolving brush	Guarantee
Strong suction power	Prolongs life of rugs
Economy of time and labor	*Removes grit and litter*
Uses little electric current	Size of factory
Ease in using	Is used in beautiful homes
Sanitary in use	Recommended by rug importers
Keeps dust from spreading	Satisfied users
Health of family	Reputation of manufacturer
Does not injure rugs	Age and experience of firm
Variety of uses	Where it may be bought
Thorough in cleaning	Appearance
Relatively noiseless and quiet	Takes up little room
Durable	Service and repairs
Light in weight and portable	Easy to clean
Price	Free trial
Method of payment	*No furniture to move*

One might observe three cautions: (1) Don't let your own likes and dislikes influence your choice of appeals. (2) Think of the consumer at all times, and if possible derive your appeals from him (see Chap. XXVII for details on consumer research). (3) Test the appeals before embarking on any expensive advertising campaign.

As Frey observes (*2*, p. 162): "Nor should the advertiser place complete reliance on appeals that have been used successfully in the past by himself or by other advertisers. These aids to judgment are good as far as they go but they often do not go far enough. Appeals effective under conditions of the past may not be useful

under the conditions of today. Appeals which produce good results today for one type of product or one brand may not be satisfactory for another."

It is necessary in any case to *use the appeal which is best for his particular product and his particular brand of that product at that particular time, for the customer at whom he is aiming, in the medium he has chosen to use.*

III. Practical Use of Appeals

Let us now examine in some detail the way a number of the more prominent appeals are actually used. We shall discuss the way these are presented, often by quoting actual headlines, and shall reproduce a few representative ads.

A. Price and Economy

Some appeal to economy, either through actual saving or through getting more for the same amount of money. Several ways in which this appeal has been used are: reduction of price, lower price than competitors, more value for same cost, less upkeep, free samples, bankrupt or fire sale, incidental savings.

An ad for Timken oil heaters shows a family conversation, "We saved money, Tom, by switching to Timken," with the manufacturer's assertion, "Like getting one free tank-full in every four!" Bendix claims "You'll be dollars ahead with the washer that's years ahead."

Newspapers contain most of the clearance and end of the season sales which feature presumably reduced prices. Magazines generally quote standard prices, where any are quoted at all. One might observe that hardly a newspaper ad fails to quote price.

This type of advertising creates a special problem—how to play up goods which are rather expensive in initial investment. A tire company presented this headline, "Blind bargains, that exact their final payments on the highways," showing a wrecked car, with the inference that someone took a chance with a cut-rate tire. A maker of rather expensive shirts pictured one man with a messy and ill-fitting collar berating his friend with, "What, you paid four dollars for that shirt? Not me, I got a bargain." The reply was,

FIG. 32. Appeal *to* Economy Motive—Expense at Present, but Eventual Saving. (Courtesy The Timken-Detroit Axle Company.)

"You didn't have to tell me that, George." The text then gave a sermon on poor bargains.

B. Time and Energy Saving

Pullman has been featuring important businessmen using their mode of travel in order to arrive at the destination fresh and fit for a hard day's work. Airplane lines likewise work on the theme that time means money, and the more important one is the more he needs to conserve time—with the implication that if you or I fly we must be "big shots." The housewife comes in for her share of attention with a picture of her dressed up to go out, and "My time's my own . . . my kitchen is Kelvinator . . . I can whip up a company dinner in half an hour." And the stenographer is not neglected either—Remington-Rand runs this: "Now! Keyboard Margin Control sets margins at the flick of a finger." The whole family is included in General Electric's "Bulb-snatcher" series, showing each member of a family progressively robbing the others of their bulbs—sister from father's bedroom for her sewing table, brother from the living room for his reading lamp, and so on—all because they neglected to spend a paltry dollar for a reserve supply of lights of various sizes. Saving effort and mechanical trouble is another common theme, seen in an ad on Motorola Car Heater's "fully automatic" feature, as contrasted with difficulties of earlier models which had to be primed and warmed up.

Saving of time in household chores is widely used in advertising soaps, cleansing powders, paint which all but applies itself in a faultless layer, floor waxes, power lawn mowers, etc. The appeal may be positive in the time and effort saved, or negative in the form of not becoming a slave to household chores. Husbands have been appealed to on the basis that it is only fair to have the most up-to-date equipment in the home, when they give their secretaries such in the office.

C. Dependability and Durability

This is by nature largely stressed in mechanical devices, particularly if rather costly. For years the Dodge automobile used this as its chief feature in advertising, although of late years it has fallen into the groove of other cars and emphasized sleekness of

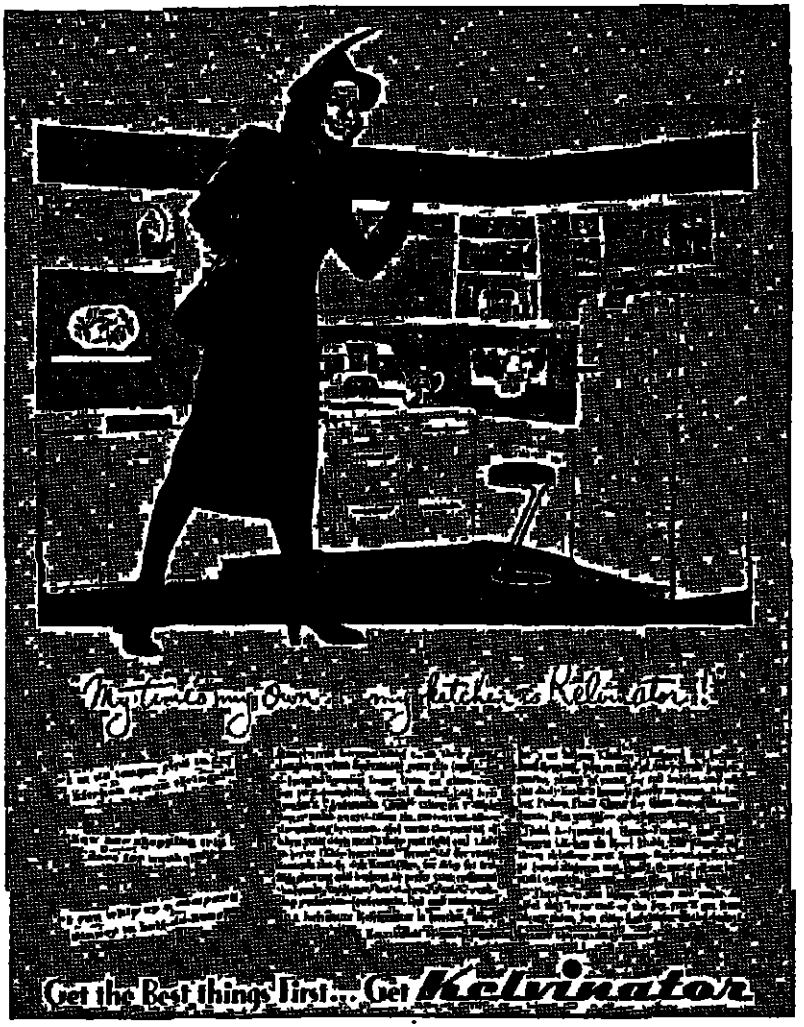

FIG. 93. Time-Saving Appeal. (Courtesy Nash-Kelvinator Corporation)

plug their products for health, energy, and rosy cheeks, often using the "Tell-Mom-to-get-you-some" argument, which is hoped to convince juveniles who in turn can make it hard for mother to resist. Other products commonly using health appeals are toothpaste, mouth wash, tonics, dandruff removers, facial preparations, and soaps, as well as some foods.

E. Food

Food is of course one of the strongest human desires. In the rating cited in Table 62 in the next section of this chapter, it does not occur as frequently as some others, but this is partly due to our method of classifying, wherein, for example, a food being plugged primarily because of its economy would be listed under price appeal.

An appeal to food for its own sake is seen in almost any Campbell Soup advertisement, which has appeared almost without interruption for many years in the *Saturday Evening Post* on the first page following the initial solid block of narrative material. There are variations from week to week, however, so the interest of the reader is sustained, by means of announcements of new soups, new uses, hot- or cold-weather recipes, and menus.

The taste qualities of foods are often used as a more specific argument than a more general appeal to hunger as such. Both headline and illustration assist in conveying this impression. The use of realistic coloring enhances this appeal greatly in contrast with a mere black-and-white illustration or purely verbal description.

F. Comfort

Comfort can be played up in various ways. An aspirin manufacturer states, "It happens in two seconds. . . . Test [tablet dissolving in glass of water] shows how fast Bayer Aspirin disintegrates in your stomach!" Relief, presumably, begins in that space of time. Chrysler's fluid ride is demonstrated by analogy, "The car that floats you as smoothly as a canoe," showing a canoe gliding without ripple over a glassy lake (see Fig. 35). Trailer Coach Manufacturers Association placed an institutional ad reading "Lucky people . . . they have year-'round smart living. There's no hous-

ing problem for the thousands upon thousands of nice people [play for respectability] who have chosen the modern trailer coach for comfortable, year-'round family living or extended travel. They enthusiastically recommend this zestful way of life for privacy, convenience, healthfulness . . . for independence and friendliness."

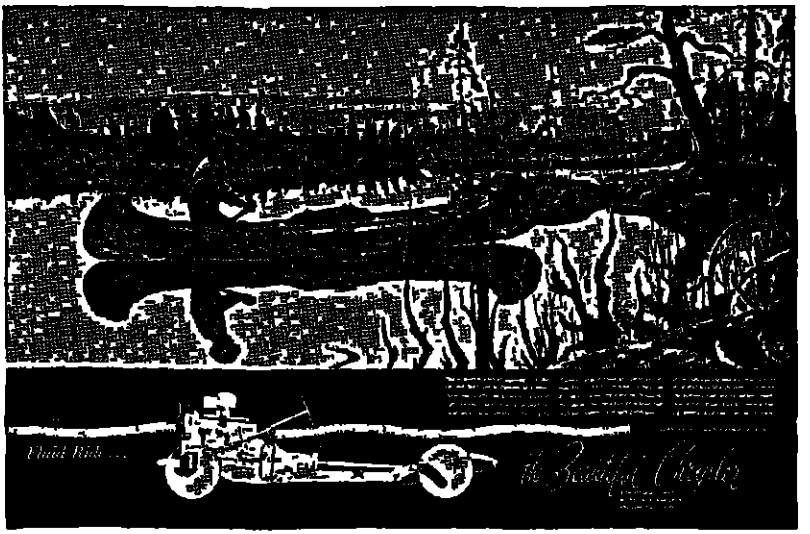

FIG. 33. Comfort Appeal, Portrayed by Analogy of the Car Riding as Smoothly as the Canoe Gliding on Mirror-like Water. (Courtesy Chrysler Corporation)

Foods, drinks, and cigarettes also emphasize comfort. After eating, drinking, or smoking certain products one does not have unpleasant aftereffects, nor does he lie awake at night after using substitute or modified coffees.

G. Safety

Safety is used in several forms, chiefly personal: against injury, *protection for family, safety against suit or unfavorable publicity,* and protection of property. Examples of tangible goods are auto tires, fireproof shingles, recommended electric fixtures, shatterproof glass, and locks, while insurance is the principal intangible commodity. We need not list here the whole run of safety equip-

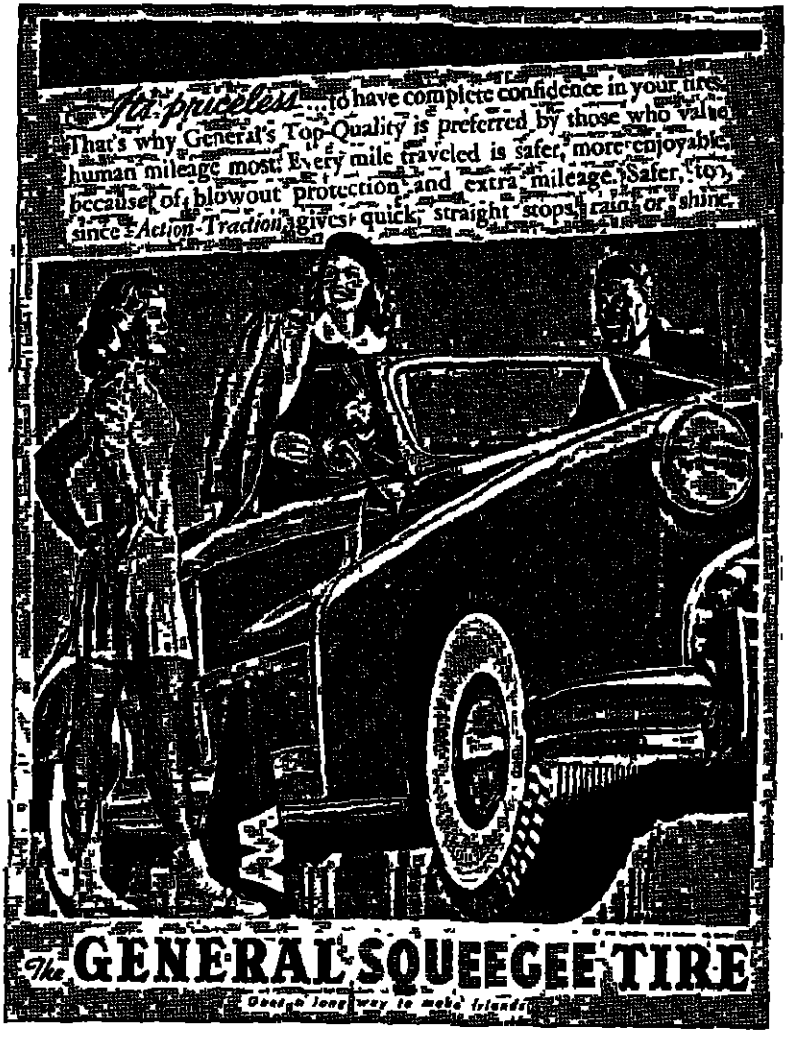

Fig 36. Safety—Tied in with Seasonal Appeal. This was published in October, hence the football suggestion is timely. (Courtesy The General Tire & Rubber Company.)

ment such as one sees advertised in trade journals, which run from safety shoes to fire extinguishers and safe scaffolds. In popular magazines the more common articles are those connected with automobile transportation and insurance for cars or the home.

H. Assurance

Assurance is closely related to safety, but it is applied to advertisements which aim at peace of mind rather than physical safety. Independence in old age is one. We are all familiar with the "$150 a month for life" series.

I. Fear

Fear is recognized by all psychology students as one of the two most powerful innate emotions, anger being the other. Fear probably occurs more frequently, and it is complex in causation. We are afraid of: (a) tangible things, such as of falling from a ladder; (b) of intangible things, such as the dark or an intruder whose presence one has no real reason to expect; and (c) social disapproval.

The use of fear in advertising is largely negative in character. In other words, we suggest the feared thing or situation and then show means of avoiding this occurring.

In Fig. 37 we present an instance in which fear is worked into an advertisement for a flashlight. Attention is called to the fact that the situation portrayed is that of the average person, an incident which might happen in any home. It also features a woman and a mother, and undoubtedly was especially designed to appeal to the problems and worries of this group.

Another example is show in Fig. 38. This is interesting since most motorists never think of the danger of monoxide from their own exhaust, so one must first be taught the fear and second taught how the danger can be forestalled.

J. Social Approval or Disapproval

The common desire for social approval, and fear of not being popular, are featured in ads which show goods designed to improve the appearance of one's house or person. Fairly costly merchandise, such as luxury silverware, is sold on this basis. The book

FIG. 37. Appeal to Fear, Especially Directed Toward Mothers with Young Children. (Courtesy Winchester Repeating Arms Company.)

FIG. 38. Appeal to Safety Through Fear; Mildly Educational in Nature, as Is the Ad Shown in Figure 34. (Courtesy Walker Manufacturing Company.)

FIG. 39. Social Disapproval as Incentive. (Courtesy Chesebrough Manufacturing Company.)

of etiquette has as its prime motivation the avoidance of social blunders. This appeal is strongly featured in women's magazines, since the readers are all potential hostesses and by their very reading of the magazine show they are thoughtful in their housekeeping. Toilet-articles sales arguments about offending others will be discussed later in connection with negative appeals in Section V.

K. Appearance

Appearance is another social motive, and arguments are directed on that ground. Clothing, shoes, cosmetics, and other toilet articles are extensively advertised with this appeal. Sex naturally rears its ugly head, since at least in advertisements one's prime reason for looking presentable seems to be to attract the other sex. Adolescent girls are told things about blossoming into womanhood, college girls how to attract more mature men, and middle-aged women how to look younger, or how to endure old age gracefully. High-school boys are taught how to fix their hair right, college men to keep up with their society, and older men to pull in their paunches with girdles! Business motives are tied in with appearance, on the "You-cannot-afford-not-to-be-well-dressed" basis, going on to the promotions being won by the well-dressed individual and even discharge risked by the poorly dressed employee.

L. Family

This is also a frequent appeal, and is utilized by insurance companies and manufacturers of household goods. A very effective ad was one showing a typical family picture in silhouette—father, mother, brother, and sister—with father in a white silhouette, much like a cut-out paper doll. The caption read: "Take yourself out of this picture, then what?" This sort of appeal is very vivid, and follows the advertiser's slogan, "One picture is worth a thousand words." Another family appeal for a slogan is shown in Fig. 40, "Against what odds will you ask your boy to fight?" General Tires ran this appeal: a family was heading for a picnic, with this heading, "To him, it's the greatest foursome in the world. . . . That's why he will trust their safety to no other tire." Buick emphasized the suitability of their car for

AGAINST WHAT ODDS will you ask your boy to fight?

WHERE will he be at 17 . . . at 19 . . . the fun-loving little fellow who today calls you "Pop"? If you could only be sure . . .

Even now you can see what he'll be up against when he leaves school. All around us the competition is sharper, more aggressive than anything you or I ever had to face.

Your boy may win through, even if he doesn't finish his education. But . . . he'll fight against tough odds.

Year by year The Union Central Life has watched the struggle grow more difficult for non-college men.

And today this old, conservative company offers you an easy, proven plan that makes it absolutely certain your boy will get the chance he deserves. That he'll start even.

The Union Central Education Plan provides . . . without danger of mishap . . . that when your boy is ready to go to school, the money will be available. Whatever [illegible] conditions take . . . whatever happens to you . . . your boy will have his opportunity to go to high school and on through college.

It is surprising how little this plan costs if you start it now, while your boy is young.

Perhaps you carry some insurance with a reliable company. The Union Central Education Plan can build on that. So keep this protection in force.

Then the next step is to find out what it will really cost to send your boy to college. The Union Central Life has made an unusual study along these lines. The results are printed in handy booklet form under the title, "A Place in the Sun".

Here are exact figures for each of 300 leading colleges . . . figures obtained direct and covering tuition, clothes, board and room, incidentals.

"Dear [illegible], we offered, as you [illegible]. Check and mail us the coupon today in the interest of your boy's future. And if you would like an analysis of your present insurance needs, ask for that also. There is, of course, not the slightest obligation on your part.

THE BOY WHO GRADUATES FROM COLLEGE EARNS $108,000 MORE LIFE INCOME

The Union Central Life Insurance Company
Dept. E-3
Cincinnati, Ohio

☐ Please send me free the booklet on college costs, "A Place in the Sun"

☐ Please arrange an analysis of my present insurance needs

Name _____

Address _____

City _____ State _____

County _____

Copr. 1930 by The Union Central Life Insurance Company

THE UNION CENTRAL LIFE INSURANCE COMPANY

ORGANIZED IN 1867 . . . . MORE THAN $300,000,000 IN ASSETS

FIG. 40. Appeal to Parenthood. (Courtesy The Union Central Life Insurance Company.)

every member of the family, not just for Dad, or Mother, or Junior or Sister, but for each in turn.

M. Sex

Sex as an instinct is founded on a desire for mating. Our civilization, however, has so influenced and altered our instincts that their expression has become greatly modified. But most individuals have interest in the opposite sex and desire to be approved by them. Also, as analysts of humor note, the very repression of sex makes it a topic of greater interest than might otherwise be the case; hence the constant prevalence of what is termed "pretty-girl" advertising, which is often highly irrelevant. This comes and goes to some extent, but is always prominent. A bathing beauty hides most of a new automobile in which one might have architectural or engineering interest. After all the girl is not supplied with the car! The comic strips run advertising in funny-paper fashion, playing up the sex motive in daring rescues, whereupon the hero who hasn't shaved in several days is supplied by his future father-in-law with a Gillette Blue Blade, marvels at the ease and quality of shave, and the romance goes into high gear.

Sex is often one of a pair of combined motives, paired with the fear of losing out so prominently utilized by drug manufacturers, success on the job plus marrying the boss's daughter, and even self-improvement by learning a new dance step or to speak French. Sex in these cases may be used to attract attention rather than to create conviction.

N. Recreation

This appeal is directly used for travel and sports, and needs little discussion. Much of this is sponsored by communities (Miami or Montreal) or by states (Minnesota or New Hampshire). Appeals are often seasonal: swimming, fishing, hunting, skiing. Again, combined motives are common, with sex or health used secondarily.

O. Self-Improvement

Self-improvement appeals are found especially in ads for correspondence courses in public speaking, business leadership, per-

sonality improvement, and technical fields. An indirect (and in the writer's opinion too indirect) usage is a recent ad by Hammermill Bond, with headline reading "Plan for the job you want," *with an offer of a free book, "Pathway to Executive Success." Then* it goes on to state, "The efficient workman needs efficient tools. When choosing paper

P. Genuineness

Genuineness plays up one manufacturer or one sales company as being head and shoulders over competitors. "Only Kimsul [housing insulation] gives you all these insulation advantages." "Delicious . . . with Genuine New England Flavor" [baked beans]. "Now you can be sure it's Armstrong's. . . . To avoid any chance for confusion, Armstrong's Linoleum is now marked on the front as well as on the back. Look for Armstrong's name at the edge." "It's a Kuppenheimer. Fine fabrics, made even better by our exclusive tempering process, are skillfully tailored to create the style and comfort that make Kuppenheimer outercoats a standout anywhere." "One Pendleton always calls for another. . . . Search high and low . . . you'll never find a man who owns a Pendleton shirt who isn't eager for another." "Only Stewart-Warner gives you Strabo-sonic tone."

Q. Quality

Westclox' "There's no better time. . . . The finest electric clocks we've ever made," implies that if they made them they must be the best the world has seen. Such sublime confidence cannot help but create reader confidence. "More of everything you want with Mercury," mentioning appearance, lines, roominess, comfort, vision, ease of driving, economy of operation, durability—in fact nearly the entire gamut of points one could consider in a car, all rolled into this one model.

IV. Comparative Frequency of Appeals

It might be of some assistance to know just how often the various appeals we discussed in the last section are actually used. We present in Table 62 a tabulation of the leading appeals in 580

TABLE 62. Comparative Frequency of Appeals in Advertisements in the *Saturday Evening Post* over a Five-Months Period

Appeal	*Number*	*Per Cent*
1. Quality, improved product	86	16
2. Dependability or durability	64	12
3. Time or energy saving	61	11
4. Food, taste	57	10
5. Family	43	7
6. Appearance: self, car, house	42	7
7. Comfort	37	6
8. Recreation: travel, music, movie	36	6
9. Social approval or fear of disapproval	29	5
10. Assurance	25	4
11. Price, economy of operation	24	4
12. Genuineness	18	3
13. Safety	18	3
14. Health	9	2
15. Self-improvement	9	2
16. Fear	1	1
17. Sex	1	1
	580	100

advertisements of one-quarter page or larger appearing in five issues of the *Saturday Evening Post,* in separate months, and covering summer, fall, and early winter seasons. The appeals were the same seventeen we discussed in the last few pages. We fully realize that the classification is far from objective, and that another rater might arrive at somewhat different totals. In many cases a compromise has to be struck. Suppose a girl is admiring a man's tie; is this sex, appearance, or social approval? An ad for shatterproof glass might be an appeal to safety, assurance, fear, or family motives. We endeavored to select the principal appeal where there was ambiguity or where a combination appeared.

Time of publication makes quite a bit of difference in the particular appeal chosen. One issue studied was in early December, with a large number of ads directed toward purchase of Christmas presents, which in turn meant that the family motive was very prominent. In fact it appeared in 35 ads, and only 8 times in four other issues during summer and early fall. Likewise, regardless of

class of appeal, seasonal features were prominent. Ads for everything from cars or tires to cosmetics showed football stadia in the background in the fall, and swimming and skiing scenes in other seasons.

General economic conditions throughout the country make quite a difference in choice of appeals. As this is being written there is a high degree of prosperity, and the price feature (or economy) is used in less than 5 per cent of ads, whereas when the first edition of this text was prepared in 1934, depression times, price was used as the major appeal three times as often.

V. Positive and Negative Appeals

Appeals may be classified as either positive or negative. The one impels the individual to do or possess something through desire for it, while the other motivates through fear of the consequences of neglecting to perform that action. A toilet article, for example, may show how one becomes attractive through its use, or it may portray a person shunned or neglected by others because he has failed to take advantage of the opportunity to enhance his personal appeal.

The whole question of positive versus negative motivation is a broad one, covering many practical fields of psychology. Is it better for a teacher to praise or censure a school child? Should a parent reward for good conduct or punish for undesirable behavior, or some of each? Can we train an animal more quickly by food reward or by fear of punishment? With advertising, should we create a positive desire, or a negative fear? In a common-sense way, we might presuppose that negative incentives ought to be stronger. One's life probably contains more pleasant episodes than unpleasant, and most people are generally optimistic. So we tend to take for granted pleasant events, and overemphasize the unpleasant. We pay little attention to temperature unless it becomes too hot or too cold. We ignore our health until we become ill. Food attracts us little unless we are hungry. Yet eventually the successful ad must impel us to action. To avoid unpleasant breath we must buy the mouth wash or toothpaste. So even the strongly negative must finish with being positive in its effect. In Table 63 we quote several examples each of positive and negative appeals.

TABLE 63. Examples of Positive and Negative Appeals

A. Positive:
1. "'Do something quick'—she shouted." (Insurance)
2. "Hello, handsome." (Hair oil)
3. "Play this with your piano—and double your fun."
4. "The B. F. Goodrich tire . . . outwears prewar tires."
5. "Now! You can afford $10,000 life insurance."
6. "Do it faster with all six features." (Vacuum cleaner)
7. "When safety's a must . . . it's Prestone."

B. Negative:
1. "Oh—Oh, dry scalp."
2. "Keep out of this picture" (Garage scene with frozen cars, antifreeze)
3. "Ouch! My lips." (Chap Stick)
4. "Feet hurt?" (Arch support)
5. "4 out of 5—even young folks, should watch out for bleeding gums." (Toothpaste)
6. "Acid indigestion can sour the sweetest song." (Tablets)
7. "Is your radio played out?" (Radio tubes)

C. Combined positive and negative:
1. "If your car feels like this [vibrating badly] . . . it's time for Marfak chassis lubrication." (Annoyance and satisfaction)
2. "This won't happen to you if you know how to change a tire at night." (Flashlight ad, fear and protection combined)
3. "If you're nervous as a witch. . . . Switch to . . . Sanka coffee and sleep like this!"

A fundamental question is the relative effectiveness of the two types of appeals. Numerically, positive far outweigh negative, by more than a 2:1 ratio. Positive appeals by their nature are aimed to impel one to action. Negative appeals are rarely unmixed, since they are almost always selling some product. We fear social disapproval, so we must buy a certain soap, perfume, deodorant, toothpaste, hair oil, or even a better-looking necktie or take dancing lessons. Some action must be suggested. The only unmixed negative motive might be a hypothetical one by say an insurance company warning people over 50 against running cross country!

Lucas and Benson (3) made a survey of coupon returns from 233 advertisements, and came to the conclusion that the two types of appeals were of approximately equal effectiveness.

FIG. 41. Negative Incentive—Discomfort in This Case. Other forms of negative motivation are seen in Figures 34, 37, 38. (Courtesy Chap Stick Company.)

Some people object to the strong negative appeals used by manufacturers of drug preparations, especially those aiming at fear of social disapproval because of bad breath, body odor, or other physiological function. They say that these companies are underhanded in their technique of building up fear, and in hinting that one cannot realize by himself that he is guilty of offense. That these appeals do work is undeniable. When the present writer wrote the first edition of this book some advertising authorities were predicting that such negative appeals could not last, that the discriminating reader would eventually turn away from such distasteful motivation. But these same companies are still prospering, and still advertising in much the same way they were over ten years ago. If some customers have gone on a buyer's strike, they have been replaced by many more less fastidious. From a standpoint of pure advertising, all social and aesthetic considerations aside, there is no doubt as to the strength of certain negative appeals.

Like other appeals, its use should be specific to the product. A negative appeal would be difficult to use in selling an automobile; one wants positive arguments as to its merits, and suggestion of something undesirable or unpleasant might associate itself with the model being advertised. Yet a negative incentive is almost inescapable with most toilet articles. Positive incentives are perhaps usable with a greater range of products, and will not run the risk of offending anyone.

VI. Argumentative Versus Suggestive Advertising

One can appeal to reason, or he can hint about the quality and merits of a certain product. *Argumentative ads aim at one's intellect, suggestive at his emotions.* A strong sample of the former is seen in the Buick ad reproduced in Fig. 42, where not only are there nine ride features of the Buick listed *seriatim,* but where the rest of the text material is very definite and factual. In striking contrast is Fig. 43, advertising the Oldsmobile, which appeared in the same issue of the same magazine only a few pages away from the Buick ad. (The reader appreciates that these are both General Motors cars, not far apart in price, which fact heightens the contrast between the two ads.)

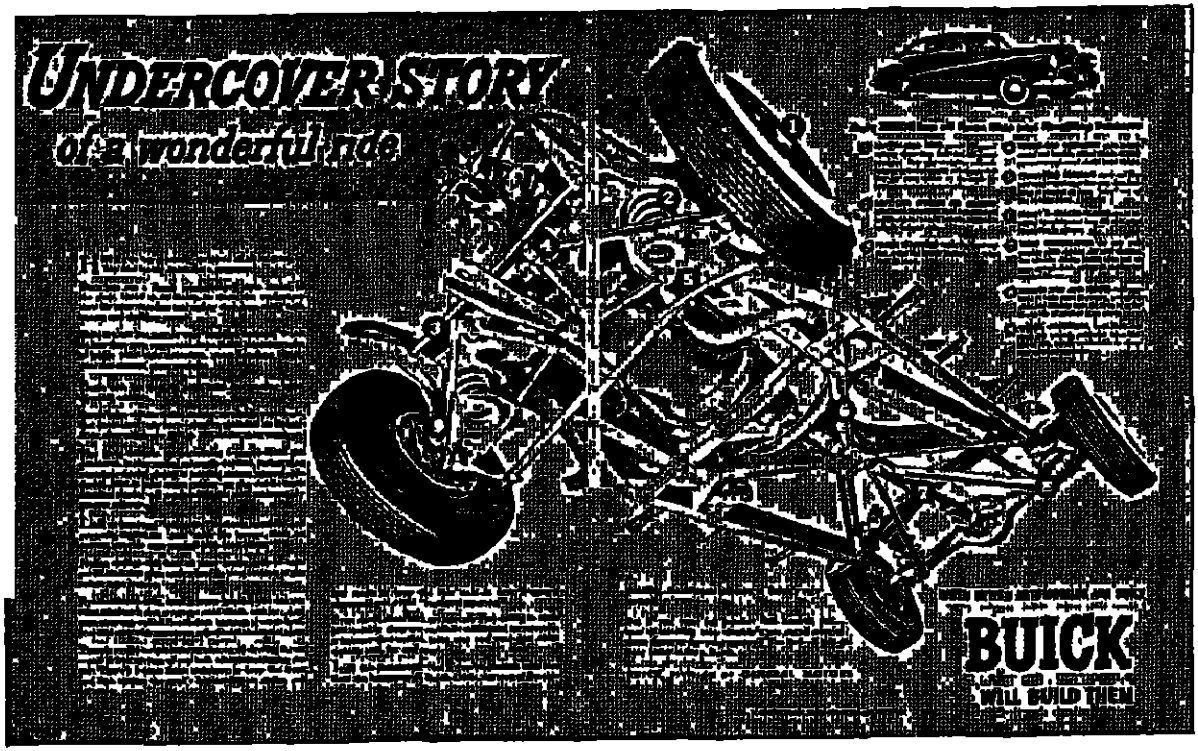

FIG. 42. Argumentative Advertising. Technical, enumerating points of advantage. (Courtesy Buick Motor Division, General Motors Corporation.)

FIG. 43. Suggestive Advertising—Appeal to Style. Note that this form of ad is short-lived; as soon as a new car appears or clothing styles change it will be outmoded. (Courtesy Oldsmobile Division, General Motors Corporation.)

Argumentative advertising is typically appropriate for technical items, such as calculating machines or other equipment where the buyer approaches his purchase in an intellectual way, and wants facts and specifications. Typical goods for suggestive ads are cigarettes, candy, perfumes, spices, and negligees. These are in the main luxury items, ordinarily not too expensive, and are bought largely upon impulse.

Yet it seems possible to use either class of appeal for almost any kind of goods. The fact that we were able to choose as fairly extreme ads those for two middle-priced cars, both of General Motors manufacture, one highly argumentative and the other suggestive, shows the overlapping that exists in choosing one's approach.

Suggestive advertising can be simpler, since it aims principally at conveying the impression of quality by color, illustration, and the choice of a few words. "Purveyors to His Majesty" proves nothing, but aims to establish class in the reader's mind. A certain news weekly has used the "class" motive in showing its magazine featured prominently in a wealthy man's club or luxurious home. Commands—"Obey That Impulse," "Say it with Flowers," "Try this New Pipe"—suggest immediate action, save words, and state their message so authoritatively that no doubt should be raised in the reader's mind. Table 64 shows samples of argumentative and suggestive ads.

One advertiser puts it this way, in contrasting argumentative and suggestive ads: "One bit of psychology—that man feels more like parting with money when being entertained than when being instructed—is in constant use today. The night clubs have long understood this principle, and leading department stores have become proficient in turning out gay, glib copy that contains few facts, but undeniably sells. Now the radio commercials grow wittier by the week, on the sound theory that the happier we are the more we will spend."

Institutional advertising forms a fairly prominent class of ads, one which may be termed suggestive in nature. Its aim is to establish favorable attitudes on the part of customers toward the company as a whole. No specific product is promoted. The telephone company has featured operators standing by while the flood rises

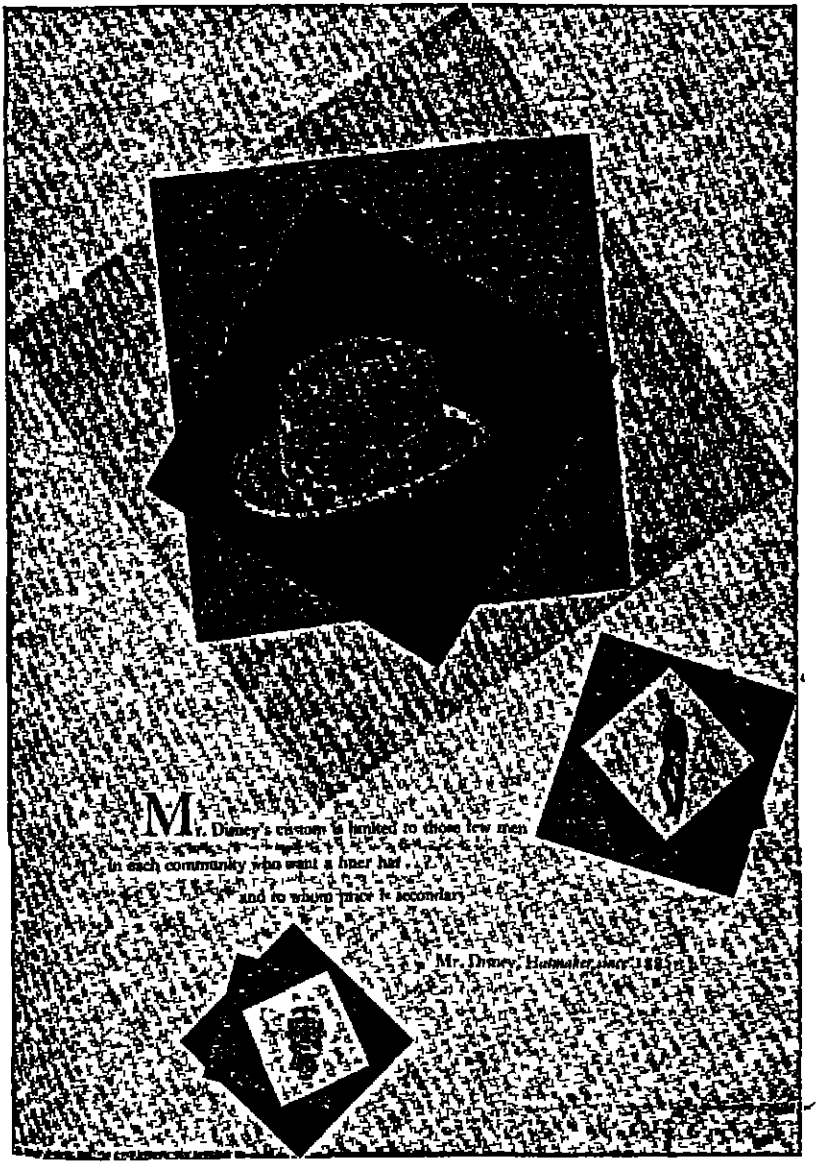

FIG. 44. Quality Appeal Conveyed Purely Through Suggestion. Asks reader to place himself in position of those with unlimited resources. (Courtesy William H. Weintraub & Company, Inc., advertising agents for Disney, Inc.)

FIG. 45. Luxurious and Stylish Surroundings as Appeal.
(Courtesy Admiral Corporation.)

TABLE 64. Argumentative and Suggestive Headlines

Argumentative

1. "Finest way to give city folks a taste of country cooking."
2. "How Quaker Oats brings extra growth and health protection to your family."
3. "Announcing New Postwar Old Dutch Cleanser . . . Made with Activated Seismotite." (We might ask, what is activated seismotite and what does it do? Also, if the former had been long advertised as a reliable family standby, why change it?)
4. "Saves 20 minutes in every ironing hour."

Suggestive

1. "I'd rather be right." (Toilet cleaner; but what does it prove?)
2. "Ahhh . . . Can't you just feel that Beautyrest luxury comfort!"
3. "Oh, his helpless heart . . . when you wear Jergens."
4. "World's Most Famous Recipe." (Dromedary [Dates] Gingerbread Mix.)

or the town burns, to illustrate the morale and dependability of their employees. An automobile company proclaims that it spent $3,000,000 retooling for their next year's models, an implication that no expense is spared in order to improve their product. Stores boast of their friendly service, dairies of their milk deliverymen trudging through deep snow, and insurance people of prompt settlements to bereaved. Studebaker has featured long-service employees, and father-and-son combinations working in the same plant. Other typical subjects are research facilities, services offered, age and accomplishments, skill of employees, and policies of management. Vacation and retirement plans may be discussed. Even such a federal agency as the New York post office quoted from the Greek writer Herodotus: "Neither snow, nor rain, nor heat, nor gloom of night stops these couriers from the swift completion of their appointed rounds."

A splendid example of institutional advertising is seen in the following, which was termed by a reviewer "a new high in liquor advertising."

"No person should spend a cent for liquor until the necessities of living are provided—and paid for. Bills for groceries, clothes, rent, light, heat, doctors, have the first call on America's payroll.

"We don't want to sell whiskey to anyone who buys it at a sacrifice of

the necessities of life. Whiskey is a luxury and should be treated as such. Fine whiskey can play a pleasing part in the scheme of gracious living—but only when taken in moderation and only after the bills are paid.

"This statement may seem contrary to our self interest. Actually it is not. As one of America's leading distillers we recognize a definite social responsibility. The very existence of legalized liquor in this country depends upon the civilized manner in which it is consumed. In the long run, we believe, it is good business for us to say 'pay your bills first'." (Seagram's).

VII. Class Appeals

Advertisements for the same article may be constructed very differently, depending on the probable audience. Suggestive ads predominate in women's magazines, argumentative are more frequently used in trade and men's journals, and ones read by the whole family have a mixture, often within a single ad.

A. Comprehension of Readers

The advertiser should talk to likely readers in terms they can readily understand. One who knows quite a bit about the product tends to introduce technical details which may be interesting to him, but which are incomprehensible or boring to others. It is suggested that one try the advertisement on a "jury" of persons of the same educational level as probable readers. Passing it around the advertising department or agency will fail to detect a misplacement in its level. One may take clues from the type of story or editorial the newspaper or magazine prints; these have undoubtedly been carefully planned for the audience.

B. Sex Differences

Sex differences are probably far smaller than is popularly assumed. Most men enjoy at least skimming over their wives' magazines—probably more than their wives like to look at their trade or professional journals. As stated above, women's magazines emphasize suggestive appeals, with style, appearance, and social approval predominating. Yet also there are many time- and energy-saving appeals.

An analysis was made of 150 advertisements each of men's and

women's shoes, with results shown in Table 65. The findings do not necessarily show what appeals *should be used,* but what advertisers *actually did use.* We do note that quality, wear, and service, argumentative appeals, rate higher on the men's list. Women's appeals are more to emotions and desires.

TABLE 65. Appeals Used in 300 Shoe Advertisements (*8*)

150 Ads for Men's Shoes		*150 Ads for Women's Shoes*	
1. Quality	63	1. Style	69
2. Price	43	2. Price	49
3. Style	39	3. Comfort	38
4. Wear	26	4. Quality	18
5. Comfort	24	5. Health	13
6. Service	21	6. Economy	8
7. Economy	20	7. Fit	7
8. Fit	6	8. Beauty	7
9. Durability	5	9. Service	6
10. Workmanship	5	10. Wear	5

C. Children

Children do not form any considerable bulk of purchasing power, but if they can be reached they may plead with their parents to buy them a certain brand. Radio advertising, tied in with mystery and adventure serials, uses this method much more than printed advertising. "Ask mother to buy you Krispie Krackies, and cut out the free picture of Dangerous Dan McGrew from the cover." "For only two box tops and fifteen cents you get a magic ring," probably worth less than the cash part of the deal, and in the meantime they have sold two boxes of something you don't particularly need.

D. Farmers

Farmers as general consumers constitute less of a special class than twenty-five years ago, with good roads and autos, but their technical needs are still special. They have a reputation of being hard-headed, and at least one advertising expert tells one to give the farmer real facts, and plenty of them, and not try to sweep him off his feet with high-sounding suggestive appeals. Tying up with his daily life is instanced in this ad: "Giving your tractor

cheap oil is like turning a cheap rooster in with blooded hens." In contrast, think how little common-sense was used by an advertiser who advertised in a farm weekly a cold preventative by depicting a crowded subway train.

E. Hobbies

Hobbies provide very strong motivation. Direct use is obvious; one ties up his product with the reader's interest. In such a magazine as the *National Geographic* vacation trips will be the chief setting for use of cameras, railroads, sports clothing, luggage, auto accessories, portable radios, and places to visit. The advertiser here has the distinct advantage of the reader desiring to read most of the ads. Other magazines aimed at hobbies are such as those circulated among camera enthusiasts, hunters and fishermen, amateur radio operators, skiers, stamp collectors, and other hobbyists too numerous to mention. In many of these, advertising is the chief thing; the written articles are definitely secondary. In these instances interest is voluntary, and the advertiser has no problem in attracting attention and arousing interest. The choice of appeals is relatively easy, since tie-ups are so obvious. The presentation will usually be argumentative, because the reader is already sold on the item in general but wants to choose among brands, for instance among cameras or enlargers, or between one type of ski binding and another.

F. Occupational Groups and Technical Experts

Occupational groups and technical experts really present exactly the same problems as those listed with hobbies, with the exception that the use will be for professional rather than recreational purposes. Knowledge is even more expert, and highly technical and statistical arguments are not only appropriate, but even demanded.

VIII. Testimonials

It is easy to imagine how testimonials originated. A salesman who meets with skepticism might say, "Just ask Mr. Smith, president of the bank. He bought one six months ago and is very enthusiastic about it." Next, he may introduce Mr. Smith's name

right at the outset; "Mr. Smith bought one of these, and I am sure you would wish to consider it also." Third, one of the articles is given to Mr. Smith for the privilege of using his name for prestige value.

Testimonials are founded on what appears to be a strong human drive to imitate others. While in some ways we may desire individuality, in many more situations we conform: styles; type of house we build; choice of car, restaurant or beauty shop patronized—all because our friends do the same thing. A crowded store attracts more customers in spite of slower service, a theater with "Standing Room Only" attracts additional clamoring patrons. Fashion makes men or women look pretty much alike, and one who differs is made to feel self-conscious.

A. Famous Person

Any newspaper or magazine will present the names of quite a number of famous individuals who endorse particular products. The implication is that if a famous or well-to-do person uses an article, you and I will do well to imitate the senator, the champion, or the debutante. Society women, movie actresses, politicians, and athletes are particularly prominent in such ads. In the main their endorsements are utterly irrelevant, although it seems to mean more to many customers that a baseball slugger or a movie actress with an enviable figure testifies in behalf of a car than if the dean of a famous engineering school arrives at similar conclusions after thorough testing. We might take the word of a movie actress on a beauty preparation, but not on a car. Nor should one accept with much authority the recommendation of a famous football player who never graduated and was still a sophomore after three years of playing, but whose name appeared endorsing a certain portable typewriter as a means of keeping up on class assignments.

B. Authority

The word of a recognized authority naturally carries a good deal of conviction. Unfortunately for the advertisers, true authorities will rarely consent to use of their name, so vague foreign specialists are decked out in white coats and photographed peer-

ing into microscopes in behalf of yeast, soap, or cold tablets. Most genuine scientists do not care to have their name used at all, and if they are willing, insist on using their own language and doing their own research before arriving at conclusions, hence won't usually come up with as striking findings as the advertising departments would put into their mouths.

C. Average Person

By contrast we find "Mrs. Smith of Grand Rapids took Reduco for three months, lost sixty pounds and won a beauty contest," or "Mr. Jones of Peoria sells subscriptions two evenings a week and never fails to earn less than $200 extra a month." These imaginary, or perhaps real, characters are made to resemble the majority of us, with the same problems and aspirations. Perhaps we feel that an actress or a champion is out of our class, so we will pay more attention to an equal.

D. Impersonal

"Can you afford to drive such an expensive car, George?" "Sure, Jim. It really costs little more than the cheapest, costs less to run, has no repair bills, and made me look so successful that last week the boss gave me a big raise."

E. Numbers, Definite or Indefinite

"Eleven thousand dentists have Garglo mouth wash in their office." The truth is more likely that 11,000 free samples have been mailed out. How many went directly into the wastebasket is the next question. Furthermore, if we doubted the 11,000 how could we verify or disprove the figure the company quotes? Are we to believe "19,293 Dentists Advise . . . Smoke Viceroys!" On the side of indefinite numbers, we see such slogans as "Ford's Out Front." Or, "See how many Plymouths you see on the road." "We had thousands of orders on hand before the first model even came out of the factory."

The pulling power of testimonials must be great, even if difficult to estimate. At least, persons of fair reputation can draw $100 to $1000 for an endorsement, and nationally famous characters even

more. On a lesser scale free samples will suffice. This is commonly used on college campuses, where the editor of the student paper or the senior class president may get a fountain pen, a carton of cigarettes, or a couple of shirts for his testimonial.

IX. Selection of Appeals

Let us conclude by suggesting a number of principles to be used in selecting the appeal by which to publicize an article.

A. Aim at a Strong Human Motive

Aim at an innate drive or a widely held acquired interest. Acquired appeals are more narrowly held, so fewer readers will be interested.

B. Make the Appeal Broad

Appeal to as many potential customers as possible. Unusual appeals or those aimed at restricted hobbies will fail to arouse the interest of many.

C. Appeal to Interests of Logical Customers

If attempting to sell to one class of people, say women or college students or farmers, ascertain what is of special interest to that class and tie up these interests to selling points of the article. This will apply to choice of magazine as well.

D. Make the Appeal Appropriate to the Article

This is a corollary of the preceding suggestion. Economy is of prime importance in the purchase of cheaper automobiles, but the more expensive are bought by persons who do not have to worry about finances but are interested in style, comfort, speed, and luxury. Trucks are bought for endurance, sturdiness, and power—not beauty.

E. Use Relevant Arguments

Whimsical, humorous, or cartoon-type ads may interest many readers, but memory value will be poor, and hence purchase will not ensue.

F. Feature Your Own Brand

Unless one has a monopoly, he has first to sell the article in general, and then convince the reader that his brand is preeminent. One competes not only against other shirt makers, but against makers of pipes or candy.

G. Do Not Make the Appeal Too Technical

There may be a tendency to quote specifications and figures which are too technical for many to understand or to be willing to wade through. The development of automobile advertising has gone from the very technical (argumentative) to where one can look in vain for a single engineering fact. The selling arguments are beauty, comfort, style, and prestige. Possibly this trend is partly because women buy, determine the purchase, and drive as much as men. Technical appeals, if one wishes to insert them, can be placed in small type, as the self-motivated reader will be willing to search for them.

H. In General, Appeal to Desires, Not Reason

Broadly speaking, we are attempting to motivate the reader, and motivation is classed by psychologists as an affective process—which means mildly emotional rather than intellectual. Logical exceptions of course are ads planned for trade and hobby journals, and for highly technical articles.

I. Vary Appeals from Time to Time

A constant appeal will soon cease to have stimulus value, and the ad will fall flat. Different appeals keep interest alive, and may attract various classes of customers. A common point can be achieved through trade mark or slogan, if one should wish to tie together a series of ads forming a unified campaign.

J. Avoid Extravagant Statements

Superlative claims will make the reader skeptical rather than convinced. Scareheads suggest fire sales and fly-by-night concerns. If one compares ads, he will see that the higher quality of auto or silverware, for example, uses the most conservative appeals.

K. Avoid Negative Suggestion

"Cut repair bills" for an auto suggests immediately the possibility of breakdown. On the other hand a positive statement such as "First cost the last" conveys the same meaning without the negative suggestion.

L. Keep in Good Taste

While there is no denying that a lot of money has been drawn in by appeals many of us consider distasteful, it would not seem a desirable long-term policy.

M. Don't Hit Competitors

If one's article has not enough positive merits to sell itself, it is better off the market. Abuse of others will impress few customers, and will ultimately reflect back against the instigator.

We have previously suggested that no general law can be drawn up as to the relative strength of appeals, since products and audiences differ. Choice is very much restricted, often to a single possible appeal. One study, however, compared various appeals in a simulated radio broadcast, using ten appeals, ten brand names, and ten modes of presentation (5). Brand names were repeated twice in the dialogue at the beginning of the six-minute record, which wound up with two dance tunes. Order and mode of presentation were balanced out, and the final ranking for the appeals turned out to be:

TABLE 66. Rank Order of Appeals in a Pseudo-Radio Test

1. Self-esteem	6. Efficiency
2. Prestige	7. Economy
3. Health	8. Beauty
4. Universality	9. Safety
5. Sex	10. Comfort

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CHAPTER XXIII

CONSTRUCTING AND TESTING THE ADVERTISEMENT

In the preceding chapter we decided upon the appeal. This is by far the most important psychological problem in advertising. It is chosen through considering human nature in general, the strong desires of potential customers in particular, and the nature of the article itself. There are also, however, a number of other psychological considerations to decide before the advertisement is ready to place before the public. These fall into three chief divisions: *Constructing the advertisement; publishing it;* and *pretesting it prior to publication.*

I. Constructing the Advertisement

A. Illustration

Practically all advertisements in the popular magazines, and most of those in newspapers, have some sort of illustration. Approximately half of their total space is devoted to this illustration, so advertisers must be convinced of the drawing power of pictorial material. This was verified in a survey of direct-mail advertising in which the addition of a cut to the same letter practically doubled the percentage of replies—29 per cent as opposed to 16 per cent replies to the letter without cut.

Of the five functions of the good ad, the illustration, including color, aims at attention, interest, and to some extent memory. The first two purposes depend somewhat upon unusualness for their efficacy, hence we might inspect the frequency of usage of various types of illustrations. Data taken from over 20,000 ads in several

popular magazines (5) are presented in Table 67. We see two principal facts: that almost no ads are without illustration, and that those showing people using the product has increased very steadily.

TABLE 67. Numbers of Advertisements with Various Types of Pictures in Popular Magazines, 1900-1940

	1900	*1915*	*1930*	*1940*
Without picture	38.7%	20.0%	8.3%	6.5%
Picture, without people	39.3	41.2	32.7	19.0
People, situation irrelevant	5.8	4.1	10.0	7.0
People, relevant use	16.2	34.7	49.0	67.5

Other uses of an illustration are to beautify the product, to make it realistic, to direct attention to it, to convey an appeal (as person drinking lemonade on a hot day, with evident satisfaction showing in his facial expression), to show various uses of the product, and to supplement the text.

Dramatization is emphasized by recent writers on the subject. In other words, vividness raises the product above mere verbal description. Attention, interest, conviction, and response may follow better than after an argumentative presentation. For example, instead of saying that 7,000,000 cars in the United States have defective brakes, it is more dramatic to picture every third car as a killer and call it Car Number 3 thereafter throughout the ad. Negative appeals are in some situations necessary to furnish dramatization. We can't show tire chains or shatterproof glass as they work effectively. We must show a car wrecked in a skid or an individual cut by flying glass; or at least a skid from which the driver recovered due to chains, or a splintered windshield which held together and protected the occupants. In dramatizing we must guard against introducing irrelevant elements. The recent wave of ball-point fountain pen ads is a good illustration of this. How often does one write to a friend while in the bathtub or 10,000 feet up in a plane?

Illustrations group themselves in terms of realism into three main classes: extremely realistic; realistic but irrelevant, such as a bathing beauty in an irrelevant situation; and purely decorative. The latter is used as a background or sometimes as the entire

illustration to advertise jewelry, cosmetics, and fine clothes. The utilitarian type is used principally for mechanical devices of a technical nature. Naturally, many ads use a combination of these types—an automobile may be shown realistically enough, but standing at a famous scenic spot or in front of a mansion. Choice of type to follow depends on one's product and ultimately reduces to a balancing of factors. The realistic probably has more conviction and memory power, but may not attract attention and arouse interest as well as one which dramatizes. The irrelevant may entertain, but may fail to become identified with the goods, and so fail to sell anything.

B. Color

Color, as we saw in Chapter XXI, is one of the latest major developments of advertising. It was at first confined largely to cover and inside cover pages, but has spread to inside pages, and even into newspapers to some extent.

At present about one quarter of ads in leading magazines are colored, and it is expected that this ratio will remain constant. The chief value of color is attention-getting, and this decreases as numbers of ads go up. The gain in returns therefore drop, and advertisers would cease paying premium rates for one or more colors.

Since one or more colors costs from 50 to 100 per cent extra, returns must be at least in proportion to justify the expense. Various estimates, made from coupon returns, show a gain of 30 per cent up. An extreme case was in a mail-order catalogue. Half of those sent out had certain pages colored, and articles on these pages were ordered fifteen times as often as by those customers who had received those same pages in black and white.

In addition to attention value, color gives more realistic depiction, perspective can be portrayed a little better than by means of black and white, distinction can be suggested for "quality" articles, and individuality can sometimes be created. The latter use is such as the red and white band of Campbell's Soup, the red bullseye of Lucky Strikes, or the particular shade of blue on Maxwell House coffee cans.

Choice of colors naturally is limited in some cases by realism,

but in some instances is wide open. Then one can use a color which would appeal to his potential customers, in terms of sex, residence, interests, and possible use of product. We know that men prefer blue; women, red; yet an ad for a motorboat would have to portray water in blue. An ad for ski equipment would have to have a white landscape, with evergreens the only trees with foliage, while a summer scene could use a wider choice of bright colors. Further, certain colors carry definite connotations. Purple, for royalty, suggests prime quality and distinction. Red, orange, and yellow are associated with warmth, but again some people associate yellow with cowardice or disease. Blue or green appear cool, and could be used for summer motifs. Finally, particular articles may demand or outlaw particular colors. One might like a bright red tie, but would hesitate to buy a coat of that hue!

C. Headlines

Next to picture and color, the headline follows as the element in an ad which attracts attention. Although its principal function is to arouse interest, in some instances attempt is made to convey a message by means of the headline which will fix the product in memory, convince the reader of its excellence, and do the selling job. These are called *product-appeal headings*, examples of which are "For Cleaner, Brighter Teeth Use Kolynos Tooth Powder" and "50% More Chicken in Campbell's Chicken Noodle Soup." Another purpose of a headline is seen in the *advertisement-appeal* heading whose main objective is to encourage one to read the copy. "Why Your Battery Requires Special Care This Winter" and "McGregor 100% Wool Sportshirts" are samples. This type depends for its success on the text being read, and accordingly is rather risky to use in a popular magazine or newspaper. In a technical journal we can assume deeper and more sustained reader interest.

In writing the headline, one must be prepared to do some real thinking. Like the title of a theme, paper, or term report you might hand in to an instructor, the headline needs to say as much in as few words as possible. Determine first what thought or thoughts you wish to put across. This decided, you can determine how you can best express those thoughts.

The heading must have rhythm, interest, and attraction; and it must be brief, specific and relevant. Irrelevant headlines may appear clever, but they tend to attract attention to their cleverness rather than to their substance. Who would guess this headline "Yes! I'm the man who remembers" is for a brand of chocolates and refers to giving boxes to family and friends in remembrance of various occasions?

Headlines may be worded in four ways:

1. *Statement:*
   "The marriage of Industry and Electronics requires good metals."
   "Fine tobacco is what counts in a cigarette."
2. *Question:*
   "Aren't you glad?" (that you are going by Pullman).
   "Have you tried it Winter-Style?" (Libby's Tomato Juice).
3. *Exclamation:*
   "I heard a miracle!" (General Electric radio).
   "Oh! My aching back! Ah! My Absorbine Jr.!"
4. *Command:*
   "Before you buy any fountain pen, try these points."
   "Start a business at home."

Timeliness is one of the uppermost factors in advertising, and probably the headline can fulfill this more than any other element. If one can hit immediate and current topics he will arouse more interest and better sustain this interest. "Quick starting all winter," if timed to the first cold snap will induce reading the fine print. Christmas, Easter, and Mother's Day are among holidays widely publicized in ads. Baseball and football seasons, hunting and fishing opening days, swimming or skiing seasons, all attract their faithful adherents, readers as well as participants. Newspaper advertising is more flexible for products dependent upon weather, as national magazine advertising has to be planned weeks ahead. Newspapers have a more compact audience, so expected cold snaps or warmer weather can be played up in a few hours' notice.

We do not care to go into the technical problem of choice of type face for the headline, especially since many are hand-lettered. There are distinct differences in legibility, as reported in detail by Paterson and Tinker (*8*), but this is probably more important

in a billboard or streetcar or bus card than in a paper or magazine one can hold within a couple of feet of his eyes. Further, various combinations of color of paper and ink produce different degrees of legibility. Finally, different impressions may be made by type face. Square solid letters connote power and durability; script, an atmosphere of elegance; and Gothic, solidity and length of establishment of a firm. Sans-serif types are effective for fashion advertising and modern furniture.

D. Text

The text (sometimes called copy) is defined as the body of material in small print, usually found below the illustration and headline. Its purpose is obviously to convey more information *and/or arguments than the picture or the few-word headline can* get across. Since this part of the whole is straightforward and informative, it is to the average reader the least interesting portion, so it must be based on the assumption that attention and interest have already been secured. The text may be compared with the verbal presentation on the part of the salesman after he has gotten the customer into a listening mood.

Keep in mind that the text should have four qualifications: (1) It should be interesting; (2) it should impress the reader as being sincere, honest, and accurate; (3) it must persuade and convince; and (4) it must lead to action (purchase) now or later.

Here is where thorough knowledge of the product, which we emphasized in the last chapter when we discussed appeals, comes in. One is to describe the article's main features, and try to convince the reader that he wants that item badly enough to buy it. And, like the salesman, he cannot know too much about the product, although he can say too much. The length of the text is a matter of individual decision. Naturally in a suggestive ad it will be short; in an argumentative it can be longer. It is probable that around 100 words should be the upper limit even for a fairly technical article (with the exception of a booklet of specifications).

The text can be used to bring out secondary appeals. The illustration can usually be employed to portray only one use of the product, and *the headline usually must confine itself to a single*

appeal. Secondary or coordinate appeals can be inserted into the text to attract other readers with different interests.

Undoubtedly fewer rules can be stated for preparing the text than for any other part of the ad. The principal recommendation we might make here is to consider the audience and write to the majority of probable readers. Write simply—the same thought can be conveyed as well in simple sentences as in complex sentences with long words. Stick to one- and two-syllable words whenever possible. One accustomed to college levels may fail to appreciate the more limited vocabulary of the average reader. One might aim *to be understood by at least 90 per cent of his audience.* This criterion can be applied to use of technical terms and semitechnical slang as well. Don't be flowery; be simple and straightforward. Make sentences and paragraphs brief; imitate newspaper simplicity and brevity.

E. Trade Marks and Slogans

Physically the trade mark is the smallest portion of the ad, but it is very important in providing a link between the ad and selection of goods in a store. Its worth, then, is in memory value. Many trade marks are very well known: The Smith Brothers, Aunt Jemima, the Dutch Girl (Dutch Cleanser), the Victor fox terrier, as well as those seen on gas station roadside signs, streamliners and freight cars of various railroads, and distinctive automobile radiator ornaments. We can also mention distinctive colors and designs used in packages: Pepsi-Cola, Jell-O, Franco-American canned goods, and various cereals and soaps. Some slogans are as well known: "Say it with Flowers," "It Floats," "99 44/100% Pure," "His Master's Voice," "Motorists Wise Simonize."

Companies value their trade marks very highly. Coca-Cola and Spearmint trade marks are valued at $5,000,000 by their owners, and some others even higher. Infringement suits run into high figures, and reflect this same self-evaluation. Some companies like Chrysler include their trade marks under good will and put a nominal value of one dollar on them, but this is technical financial minimization.

Trade marks should be distinctive in one or more of the following elements: color, geometrical form, type face if a word or

two is used, picture, and name of product. Trade names should be distinctive in spelling and pronunciation (and easy to pronounce), and should be easy to remember. We cannot blame a manufacturer's being proud of his name and wishing his product to bear it, but if he has an unusual name his sales are likely to suffer. A candy manufacturer whose product was called "Beich" had to put an interpretation, "Say Bike," along with it.

Sometimes a trade name can connote the product, such as Coldspot refrigerators, Shinola shoe polish, or Holeproof hosiery. Zenith and Gold Medal are not logically associated with radios and flour, respectively, and will take many more repetitions to fix the association in the public's memory. There is some danger in a descriptive name should the company branch out into other products. The Frigidaire stove and Hotpoint refrigerator strike most of us as misnomers, and we would be of the opinion that these companies which expanded into other household products would have done better to give them new names. A general series, such as Sears Roebuck's "Cross Country" line of automobile accessories, does suggest travel but is not tied up too specifically with any single item.

Quality can be suggested by a name. "Stratford Regency" is the name of a fountain pen, which sells for only one dollar, yet certainly sounds very fancy. Top-Flite and Davis Cup have been used for high quality tennis rackets. In contrast, the writer once owned one called "Attaboy," which was among the best in quality and price, in spite of its name suggesting it might be bought at a chain drug store for $2.98. Names of some articles sound so silly that one imagines that thousands of customers fail to ask for them for fear of appearing silly themselves. I well recall the expression on a man's face when his wife asked him to bring home Bab-O, Kosto, and Dippo (scouring powder, pudding, and silver polish, respectively.)

Infringement is a definitely psychological problem. Once in a while an unscrupulous company attempts to cash in on the reputation of an established concern, assuming a trade name very similar to the original. Then of course it denies the charge, and the problem is whether the similarity is close enough so that the customer is likely to confuse the two. Suppose a rival of Target tobacco puts

out a brand called Bullseye—will the sales of the original be cut down? No rule can be laid down, but we might suggest that a fairly simple recognition test could be devised and tried out on a sample group of tobacco buyers, to see whether in a multiple-choice situation (which is really what one meets in buying from a store shelf) the supposed imitator's name is confused with the original. We could put in a list of five trade names, real or made up for the purpose, say three tobaccos and two other names, including in half the lists Bullseye, and see if it is checked as often as Target which appears in the other half of the lists.

The cola drinks furnish an interesting example of imitation. Cola is a generic name, like ginger ale, so only the Coca-Cola combination can be protected. As long as the first word is not imitated there is no infringement. An experiment in confusion of 25 trade names was run (*4*), and in no case was there perfect agreement among student judges as to whether such names as Radiola or Dictaphone were trade or generic names. More than two thirds incorrectly designated Dictaphone, Mimeograph, and Thermos Bottle as generic terms, whereas they actually are trade names used by single companies only. Kodak and Frigidaire, often popularly thought of as names for the whole class of cameras and electric refrigerators respectively, were rarely confused by these students. The investigator commented that probably students are more alert and discriminative than most buyers, and that confusion on the part of the general public would be more severe.

Another interesting application of patent law is that there is legally no infringement if the name is similar, so long as the product is completely different. For example, V-8 vegetable juice could not conceivably harm sale of Ford cars. One could with impunity, also, make Gold Medal shirts or tires or radios, but not flour or even prepared biscuit dough without infringing. Blue Ribbon potato chips do not interfere with Pabst Blue Ribbon beer. One cannot, however, register a name already in existence. For example no one could patent goods named after a famous man, a state, or a city, such as Lincoln Shirts or Iowa Canned Corn. We might wonder whether the well-known Manhattan shirts could successfully prosecute an imitator.

F. Arrangement—Layout

We have discussed the separate features of the ad. Now the whole must be built up, so that the reader's attention will be directed through the various parts, so that each part contributes its share toward success of the whole ad, and so that the whole is balanced and harmonious.

Elements to consider are: shape, balance, border, white space, background, movement (directing eye movements or illusion of motion), proportion, and gross amount of material to include.

In one ad the following changes, each of which sounds technical and not of major importance, were made: a prominent border was removed because it distracted attention, the headline was printed in reverse (black with white letters), the type under the heading was made smaller, a black bar at the bottom closed the ad off, and a circle was placed around the text with a small illustration breaking it at one place. These changes increased the number of mail responses threefold. Note that none of them were major—the appeal, headline, illustration, and text remained as they were originally—yet the first ad did not "click," the second did.

Let us make several layout suggestions:

1. Keep simple; don't overcrowd with many appeals or many illustrations. Minimize distractions. As in many situations, one has to inhibit himself against using everything from A to Z, which would only discourage readers.

2. Leave plenty of white space. This lends dignity and avoids the fire-sale type of ad, as well as separating ours from other ads.

3. Lead the eye through the whole ad in desired sequence the natural and easy way, which is from the upper left-hand section down to the bottom.

4. If less than a full page is used, set off your ad with a border. Don't make the border so massive or ornate that it distracts. It is only a dividing line, not an essential feature of the ad.

5. Avoid triteness. Try for originality, although as one writer puts it, "The purpose of advertising is to move people to action, not to glorify the cleverness of the layout man."

6. Consider balance and other aesthetic aspects of the ad. Balance and aesthetic factors must be considered seriously, but definite rules are impossible to lay down. True, one is held down somewhat by natural features: headline is usually well toward the top, illustration is almost invariably on the top half of the page, text is in lower half, and trade mark is usually centered along the bottom. But certain departures are seen. The headline may be under the illustration. The illustration may be at top or below the headline. There may be two principal illustrations, or one large one and several smaller ones of postage-stamp size. The trade mark may be an essential portion of the illustration and so will need no further repetition. The text may be of various word lengths and occupy somewhat varying proportions of the total space. Within general limitations one can make many departures.

Symmetry creates a pleasing appearance and cannot be violated too widely. If one has two illustrations he can still achieve a reasonable balance by placing one in upper left and the other in lower right. Some ads are laid out in S or Z shapes, to conduct attention through the entire layout. To keep attention, the direction faces are looking or hands are pointing must be faced inward, and ideally toward the center of interest.

II. Publication Problems

Having more or less determined the structure of the ad, we now have a number of publication problems: choice of medium, size of ad, frequency of insertion, and location within the journal. Of course it must be appreciated that these problems will also partially determine the make up of the ad. Different appeals will be used before different audiences, a quarter-page ad will have text minimized and probably no more than a single picture, and color will probably depend on location within the magazine.

Some companies have devised simple advertisements and used them for a wide variety of advertising situations. Wrigley's gum is an outstanding example of using a simple ad in various magazines and newspapers, billboards, and bus cards. It has only a schematic illustration and no text, and so is adapted to many conditions.

Several studies have attempted to deduce ratios between size of ad and effectiveness, and the general conclusion seems to be that value does not increase directly according to size, but in a square-root proportion. Thus doubling size only effects a gain of 1.4, and quadrupling it doubles its sales value. This calculation would suggest that more frequent insertions, or buying space in several newspapers or magazines would be most appropriate for, and bring in the best returns to, the advertiser who must exercise some control over his budget.

There are also other considerations, depending on the journal. In a technical or hobby magazine attention is deliberate, and an ad of even a portion of a single column may be read by a high percentage of readers. The more general the magazine the more the attention and interest have to be won. Another consideration is that some types of goods need space to put the message across. Sometimes it is necessary to include a fairly large picture in the advertisement. An automatic-stoker furnace, for example, could hardly be put across in a quarter- or eighth-page ad. On the other hand patent-medicine makers seem to find effective extremely widespread insertion of many little ads. Practices of one's competitors may dictate to some extent one's own practices.

C. Frequency of Insertion

Frequency and size are inseparable, yet each has certain problems not identical with the other. Seasonal advertising or advertising of a new product may demand a concentration of advertising, which then is discontinued after the height of the season has passed or is diminished when it has been well introduced to the public. This latter suggestion means insertion every issue for a while, then gradually tapering down. This common-sense approach fits in well with recognized curves of forgetting, taking suggestions from them for reviving memory and keeping it alive. By keeping successive ads in front of the public regular review is provided. But since after a review or two forgetting goes on more slowly, later insertions can be spaced farther and farther apart. One might, for instance, insert the first three weeks in a row, then every other week three times, and then gradually spread farther and farther apart.

D. Location Within the Journal

There are several preferred positions, and charges vary accordingly. In most magazines the inside front and back covers, outside back cover, and center pages are pretty certain to be seen. In a newspaper a preferred location is more for readers with certain interests—near the editorial, news, women's, or sports sections.

It is rather difficult to evaluate the effectiveness of preferred locations, since they are usually colored in the more popular magazines, and since large companies generally buy these spaces on a

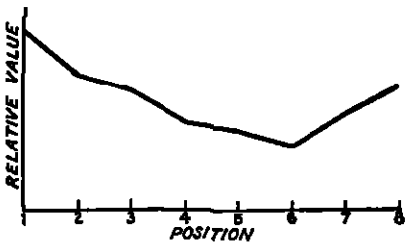

FIG. 47. Proportionate Value of Different Positions Within a Magazine.

long-term basis. Campbell's Soup, for instance, has most of the time for years occupied the right-hand page in the *Saturday Evening Post* after the "Post Scripts" page; so there is no control test made by having their page located elsewhere.

There have been tests, however, made of memory value for ads placed in various locations throughout the main body of magazines, ignoring the preferred locations. The general tendency shown in Fig. 47 is typical. The first advertisement shows the highest rate of returns, the second and last are about even, then the third and next to last, and so on, with the fifth or sixth about the poorest. In fact, the whole curve looks much like one we might obtain by hanging a slack rope with the left-hand end a little higher than the right.

Practical application of these findings would be that one might request one of the first or one of the last pages, if he is not using a preferred location. The intermediate pages all cost equal amounts, so price is not a consideration within this section.

It might also be desirable to place the ad in a position where the class of people sought as customers will be likely to see it. This is fairly easy in newspapers, where the main news, features, household, sports, and financial sections are clearly separated. In magazines such coordination would be more difficult to work out, but sporting goods might be placed in the latter part of the magazine on pages where an athletic story is continued, cosmetics or perfumes next to columns carrying a love story, etc.

Placing ads next to cartoons was experimentally tested. We all recognize that cartoons attract the attention of the majority of readers, but what next? By doctoring up an issue of the *Saturday Evening Post,* prior to issuance so no reader had yet seen it, positions of ad and cartoon were varied so that all position factors would be balanced out. Eye movements of readers were studied by means of the Purdue Eye Camera (7), and it was found that the average time spent on an ad on the same page as a cartoon was 2.94 seconds, whereas 4.54 seconds were spent when no cartoon was present, a statistically valid difference. However, "reader traffic" undoubtedly increases if cartoons are scattered throughout the magazine, so even if less time is spent, many more readers may see the ads than would be the case if no cartoons were included.

III. Pretesting the Advertisement

"The layman too often thinks that advertising successes are the results either of bright ideas which spring spontaneously from the minds of advertising men or of the observance of rules of thumb which can be easily learned by the neophyte in business. To be sure, ideas which seem to come out of nowhere sometimes prove valuable for advertisers. And rules of thumb are employed in the advertising field as they are in most others. Most successful advertising ideas, policies, and procedures, however, are the result of considerable thought on the part of executives, usually supported by research" (3, p. 617).

In this respect, advertisements are like any psychological device, such as an intelligence or a personality test. One does not simply make them up out of thin air and send them off to the printer. The appeal and other parts of the ad may appear excellent to the originator, and still prove to be utter flops. What ap-

pear to be very minor changes can make vast differences in the number of replies received. So the ad, possibly several versions of it, is usually tested prior to issuance.

This pretesting may be on four levels: (1) The ad may be passed around among the buyers and one's associates in the advertising department, and they give their opinions and criticisms. This is obviously not a true test, but merely sampling opinions of a limited audience. (2) The ad may be subjected to scrutiny in terms of a set of rules or a point-scoring scale, to see if it measures up to a sort of yardstick. This yardstick is set up either on a theoretical or common-sense basis, or it may have been established from past experimentation. (3) An actual test is tried. Space may be purchased in several small-town papers and several versions of the ad tried, one in each paper, and either the best is chosen or improvements are made on one before we embark on a large-scale campaign involving thousands of dollars. (4) Laboratory tests can be run (*1*, *2*, *6*, *8*).

A. Pre-Analysis

Pre-analysis, as a system, was described by one authority (*6*). The advertisement, chosen on the bases listed in Table 68, which

TABLE 68. Thirty Four Magic Words—the Key to Pre-Analysis

Which of these advertisements offers
1. To the correct customer market (not too limited)?
2. Satisfaction most clearly (wants versus don't wants)?
3. With the least possible distraction (relevancy)?
4. In the most specific terms (specificness)?
5. With the greatest assurance to the reader (believableness)?
6. And at the least expenditure of effort (easy to act)?
7. Or money ("free" wins)?

satisfies more criteria will usually outpull a comparable competitor. Pre-evaluation analyzes the potential relative effectiveness of advertisements prior to publication. But it is pointed out that this is a first step only, and is not a substitute for scientific and accurate pretesting under actual conditions. We might start with six or eight alternatives, and eliminate all but two or three, or even improve all by application of these pre-analysis principles,

and then subject the remaining or improved possibilities to actual testing, preferably by the split-run technique.

Let us now examine several tests involving some of the above seven criteria (rules 5 and 7 are not discussed).

Rule 1: Right Market. In ads for a two-dollar book on hair culture, one outsold the other 312 to 66, by appealing to men rather than women. "How a bald-headed barber helped to save my hair," rather than "Save your hair as I did mine! Every woman can." The second heading applied to too limited an audience, as we all know that women are rarely afflicted with falling hair. Undoubtedly, the reference to the bald-headed barber also aroused a good deal of curiosity.

Rule 2: Satisfaction. What do people want most? This is merely a restatement of the problem of motives to which we devoted Chapter XXII in entirety. Dale Carnegie's famous book was advertised in two ways, "How to ruin your marriage in the quickest possible way," and "How to win friends and influence people," and the second outdrew the first by two to one. It appealed to a wider market, unmarried as well as married, and didn't in effect exclude those who felt themselves satisfactorily happy in their marriage.

Rule 3: Relevancy. The role of relevancy is a much-debated point among advertisers. One school of thought argues that attention and interest values are greatly increased by humor or unusualness. The other side grants the attention and interest factors, but claims that memory will be poorer and that lack of dignity will reduce conviction of the product's excellence. A series of food ads used two approaches. One series had such headings as "When King Edward dined out, he chose the cook himself," and the other had more direct appeals such as "Pies men like" and "These taste expensive but they cost 49¢ to 64¢ to serve 6." The first pulled 246 inquiries per 100,000 circulation, and the series which talked food directly drew 1371 per 100,000 circulation. The relevant outdrew the irrelevant five and a half times.

The writer has time and again tested the relevancy factor in a class experiment. Pretending the ads were to be rated only as to suitability of colors, later recall tests were unexpectedly made at the end of the laboratory period. The product had been mentioned, but on the guise that color must be rated not abstractly but in

terms of appropriateness to the product. Those ads in which the illustration was irrelevant, even if attractive or humorous enough, uniformly had very low recall values.

Humor is not necessarily irrelevant. Effective public speakers use anecdotes, of human-interest or humorous nature, to drive their points home and make them stick. Advertising can use the same trick. Nationally famous are Dr. Seuss's fantastic animals and "Quick, Henry, the Flit." But engaging as the drawings are, there is still definite application and relevancy. More or less relevant also are the ads in comic-strip style in the Sunday papers. The hero clinches his love affair by using Gillette Blue Blades, or saves the girl after deriving vast sudden energy from a certain candy bar.

Rule 4: Is It Specific? Resinol increased requests for samples fourfold by changing "blemishes" which could mean almost anything to "pimples" which is a highly specific if not too pleasant term. General Electric oil furnaces were featured with these two appeals, "G-E engineers find a way to make each drop of oil produce many times more heat," and "Owners save 20% to 50% on fuel with the G-E Oil Furnace." Guess which? The second outpulled the first fourfold. The appeal is much more specific to the home owner. Who cares about engineers' findings and about single drops of oil?

Of similar effect was an appeal direct at energy saving. Johnson's Glo-Coat ran ads of the same size, same location, same newspapers, in the same season, which had these two headlines, "For your kitchen floors," and "No rubbing! No polishing!" The latter outdrew the other by 383 per cent. Instead of merely improving your inanimate floors, it is your human energy which is being saved, and in this case the personal appeal really rang the bell.

Rule 6: Can the Reader Act Easily? The effectiveness of an ad is usually estimated from either coupon returns or increase in sales. The former affords a better measure of the ad's qualities, since sales are affected by too many additional factors, while the coupon must come from the ad itself.

The structure of most coupons can be criticized. They are entirely too small for one to fill out, and often there is one line for name and a second for one's entire address. If one doesn't happen

to live on a street or in a town both with short names he may find it impossible, and call the whole thing off. Radio offers are frequently made too complex in the advertiser's zeal to key his offer. "Send a box top and ten cents to John S. Brown and Company, Dept. 243-L, Box 1589, Chicago 61, Illinois," instead of "Send for a free sample to Brown and Company, General Delivery, Chicago." Do not place any more deterrents in front of potential customers than absolutely necessary.

A final word: If of several alternatives one ad proves to be best, do not assume that this is necessarily an excellent advertisement. It may be merely the best of a mediocre lot. Maybe all should be discarded, or the best improved still further. One should check all seven of the factors listed above and verify that the proposed copy fulfills in a vigorous way each of them.

Another system of pre-analysis makes use of 27 principles against which proposed copy is checked. This procedure is applied on a consulting basis, and is confidential with the originator, so, the present author cannot divulge the principles and methods in full. We shall have to content ourselves with looking over a few sample criteria. These 27 principles are weighted, attention for example being assigned 25 points, layout and illustration 7 points, interest 5 points, and so on. Each missing or poorly presented factor counts against the total "Effectiveness Rating." An example of evaluating a well-known advertisement is applied to Lucky Strikes' claims of "Easy on the draw" and "So round, so firm, so fully packed." The "firm" and "fully packed" claims would seem to invalidate the "easy on the draw" claim; hence a penalty of two points is inflicted on the basis that *proof* of quality is poorly handled. Ten more penalty points are assessed because there is no one principal appeal, but rather the relatively noncommittal headline "Lucky Strike Means Fine Tobacco" and at the bottom the slogan "So round, so firm, so fully packed—so free and easy on the draw."

Critical appraisal of this system is difficult. Experimentally, one would have to use a split-half method, publishing a proposed ad untouched, and a second ad revised in accordance with the shortcomings detected through evaluation in terms of these 27

points. On the other hand, this system, costly as it may be, has been installed by dozens of nationally known advertisers, large city stores, and advertising agencies, so it must be acknowledged to be well considered by professional advertisers.

Research of the type described in the last several pages has the same limitation as any form of "field" studies, namely that there may be uncontrolled variables. It is difficult to alter just one element without causing other changes. In some of the paired ads just discussed, a change of headline actually meant some necessary alterations in the text, or illustration, or coupon, as well. Advertising in two successive issues may run into weather or seasonal changes.

B. Laboratory Research

For these reasons experimentally controlled research is often attempted. This may involve a wide departure from previously discussed techniques, and use direct laboratory experimentation on students or other subjects. One can test such factors as attention value, color preferences, visibility of different type faces used in headlines, recognition values of trade marks, comprehension of different forms of text presentation, and memory for any of the above features. The subjects may be aware of the purpose of the test—it is hard to conceal this—in which there may be some criticism on the ground that attention is deliberate, whereas the usual reader is only attracted to advertising in the course of his recreational reading. Incidental memory techniques are sometimes used, in which the reader is exposed to some material (like the color-preference test mentioned above), and later on memory for something else is requested. Another technique is to post a dummy ad in a store window, and the experimenter posted unobtrusively at the side counts the percentage of passers-by who look at the ad, times the duration of attention, and if possible notes their eye movements as they sweep from one part of the ad to another. Two alternative ads may be posted, in which case time spent on each suggests which is preferred.

Memory tests may be run on readers who have read their magazine without anticipating any follow-up. Names of subscribers

are secured and a questionnaire survey run. The nature of this approach gives an unlimited range of problems which may be studied. The methods used are usually either recognition or recall. In recognition, the reader may be shown a number of ads, with instructions to designate which he has seen before. Half of the series may have actually been in the magazine, and the other half clipped from elsewhere and inserted for verification purposes. One may test the various parts by showing only headlines, or illustrations, or trade marks, to see if they are identified. Recall may be employed by asking the interviewee to name a brand of spaghetti, or cigarettes, or perfume. It has been found that the first-named item is the customer's preferred brand in 36 to 88 per cent of instances (*9*). One limitation of either the recall or recognition methods is that rarely has the customer limited his reading to one magazine in the last few weeks. He has probably seen several magazines, daily and Sunday papers, billboards, and listened to the radio. Experimentation in this field is far from laboratory in its simplicity.

Such surveys are best run in the form of face-to-face interviews, which are relatively time consuming but thorough and accurate. Telephone interviews may be used for a few quick spot questions. Mail questionnaires are fairly easy to handle, but returns are likely to be few and one cannot be certain whether those who do reply are typical, or tend to be those specially interested in advertising or in the particular product in question, or just with idle time on their hands.

Finally, it must be emphasized that like any other type of research, advertising investigations do not solve a problem once and for all. As Frey says:

> "Research should be continuous if its full potential usefulness is to be realized. A problem correctly solved today may demand a different solution tomorrow. New problems arise. The tastes of consumers and their purchasing power are not static. Buying habits and living habits change. New media make their appearance, old media leave the scene. Techniques for making advertisements undergo improvement. Research techniques themselves are improved. Research should be a welcome guide through these ever changing conditions" (*3*, p. 619).

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CHAPTER XXIV

DIFFERENT TYPES OF ADVERTISING

I. Problems

The discussion in the last three chapters has been concerned particularly with problems encountered in general national advertising. Most of the recommendations apply to both magazines and newspapers. The newspaper presents a few special problems of its own. There are also a number of other forms of advertising—billboards, radio, free samples, direct mail, standard packages, and streetcar and bus cards. We meet each of these daily, so they must be classed as important devices. Each has its individual problems and methods of treatment.

II. Newspaper

This medium has so many points in common with the magazine that our task is chiefly that of pointing out the slight differences between the two. The chief differences are the distribution of readers, attitudes while reading, time of publication, and techniques of printing.

While we tend to think of a newspaper as one of the major big-city journals, like the *New York Times*, actually this class constitutes only about 3 per cent of the whole. There are about 1900 daily newspapers in the United States, one fifth morning and the rest evening, with 500 appearing on Sundays. Eleven thousand weekly papers appear, chiefly of local interest, although some circulate among racial, religious, and special-interest groups over a wide area. Quite a number are in foreign languages. Some

of the metropolitan papers enjoy national reputation and circulation. An ad in the *New York Times* is largely comparable to magazine advertising.

Newspapers in general, however, are relatively limited in circulation area. This means that an appeal may be made in specific fashion, whereas the magazine advertiser usually has to be broader in his aim. On the other hand, newspapers are more likely to be read by rich and poor, men and women, old and young, and representatives of more occupations than all but one or two nationally circulated magazines. Rarely are differences of wealth or education consequential except perhaps in contrasting the extremes of tabloids versus a few of the more intellectual journals.

Interests of readers may be assumed to be fairly homogeneous, since they are in a limited locality, and since many areas are largely dominated by one class of industry—steel, corn, cotton, mining, commerce, cattle. Study of subjects of editorials over a few weeks should help an advertiser design his appeals, as these give a clue on important current local issues.

With daily publication our appeals may be made in terms of current events, weather conditions, and other transient topics. The national advertiser must plan weeks ahead of time, but the local merchant can take advantage of prediction of rain or frost, news of a convention meeting in his city ("Welcome, Legionnaires!"), and plan his copy accordingly. Goods appropriate to washday, maid's day out, lodge night, week-end entertaining, can be featured at the appropriate time.

The local touch is still present to some extent. As one writer puts it, there is a "John to Jim feeling." This is a remnant of the earliest days of advertising, when as we mentioned in Chapter XXI there was little distinction between personal news and business announcements.

The behavior of people in reading newspapers is an important consideration. Generally they read newspapers much more hastily than they do a magazine, perhaps because they come out daily instead of weekly. Much news is not interesting to any given reader. The bulk is much larger than most of us think; the large city daily paper has as many words as a long novel—and certainly one could not read this much every day.

Yet more people look at newspaper ads deliberately than search out magazine publicity. They search out theater programs, bargain sales, food ads, announcements of new clothing, and many even read the want-ad section. But because of the haste in reading, the newspaper ad must be briefer and simpler than the magazine ad. It must impel to immediate action, since the paper is rarely picked up a second time, whereas magazine coupons come in for at least six weeks after the issue appears. Prices are featured more prominently in newspapers.

Evening papers are read a little more leisurely, so there is usually a greater percentage of advertising in it. The housewife plans her next day's shopping from it more carefully than she plans today's from the morning paper.

Another distinction is that the paper carries many ads of stores. So it may be said to attempt to make people buy *where*, and not just *what*. The local paper which advertises a nationally distributed product will add a local touch in giving names of dealers who stock that item. But in general the local merchant is more concerned with your buying in his store, and not so much whether you buy brand A or B. Much local advertising aims at steady customers, to keep their patronage.

A final difference is the technical one of appearance. Because of the quality of paper, the illustration has to be much simpler and less detailed. Color is rare, and used solely for attention value rather than for depiction or creation of feeling-tone.

III. Outdoor Advertising

Previously we stated that outdoor advertising was the earliest form of publicity, except perhaps for the spoken word. The Greeks and Romans painted signs on walls. Printing gave us the temporary paper poster, used for circuses, political candidates, and other matters where display for a week or two is sufficient. The wood or metal is painted directly on more permanent locations, billboards, sides of barns, and other signs beside the highway or railroad.

Outdoor advertising is generally used to supplement other forms. Hence it is designed to keep memory alive, rather than to create memory and conviction. By the fact that people are in motion when they pass it, the text portion of other types must be fore-

gone. One might say that a billboard is an advertisement made up of headline, with perhaps a simple illustration, usually in color, and often with trade mark or slogan presented. The people going by are representative, some pedestrian or traveling by bus or train, but in the main the motoring public. Therefore they are potential buyers of almost any mass product, such as chewing gum or cigarettes. Also, since they are motorists they will buy gasoline, tires, antifreeze, and eventually a new car. Those outside of city limits are often interested in restaurants, hotels, or tourist courts.

The placement of these billboards is an important matter. What is comparable to a preferred location in a magazine is a spot directly ahead at a corner. One cannot help seeing it by day, and at night his lights illuminate it. Companies often take advantage of corners to combine their advertising with warning signs or arrows. Giving the distance to the next town is of interest to the motorist, and keeps attention on the billboard longer than would otherwise be the case.

Signs that call for one to stop, such as for a filling station, restaurant, or tourist cabin, should be carefully placed so that the motorist can make up his mind to stop and then do so without having to slam on his brakes suddenly. How many times has any one of us found ourselves past a place before we fully decided to stop? If one has to talk it over with his family, several miles may be necessary, plus a final warning sign a half mile from the spot itself. Overnight stops, hotels or cabins, aren't decided on on the spur of the moment, but usually after some deliberation, so it is suggested that such concerns place a number of signs. The writer once noticed signs advertising a hotel in North Carolina along the road just south of Washington, a day's drive away. Those distant signs might be far more effective than ones right outside the limits of the city in which the hotel is located.

Signs along railroad rights of way present a definite limitation in that one looks out of the side of the car rather than from the front as in automobiles. As such they must be placed at least a hundred yards from the tracks in order to be read, and this is not always feasible. Factory and building sites, commercial enterprises, and hotels are major items advertised this way.

Mention must be made of the broken signs used by Burma Shave.

A series of spaced signs with catchy doggerel attracts and amuses the motorist. This form of advertising must be efficacious, as sales of that company have increased greatly. It is interesting to note that they have few imitators, in spite of this, probably because this unique form is so tied up with the one company that others hesitate to step in.

Electric spectaculars are largely confined to business and theatrical districts of cities, although the development of neon lighting has enabled attention-compelling signs to be installed in front of everything from stores to funeral parlors to night spots. Color possibilities are virtually unlimited; tubes can be bent to produce more realistic and artistic signs than was previously possible with bulbs; and motion or apparent motion adds to attention value. Figures move, beverages are poured into glasses, correct time is flashed, or news flashes are presented. These signs are very expensive to install and maintain, although neon uses less electricity than bulbs and a huge sign may not cost more than a dollar or two an hour to illuminate. The number of viewers is large. In fact, such a brilliant display as seen in Times Square in New York City is world famous. But it must be remembered that the audience is almost entirely made up of pleasure seekers, so a brief, suggestive message is all one should strive to get across.

Public opinion is not entirely favorable toward this form of advertising. Cartoons have shown tourists climbing ladders they have brought along to look over the tops of billboards at famous scenes. Approaches to cities are sometimes almost solid walls of advertising. In some localities every farmer's barn is painted by *laxative or chewing-tobacco ads*.

Recognizing this growing tide of feeling the Outdoor Advertising Association of America has standardized methods of doing its business and has agreed to a code of ethics, embodying among other points not to put up a billboard where it might create a safety hazard, where it might interfere with view of natural scenery, on residential streets, or in any place without leasing or obtaining owner's consent. In addition, certain legal restrictions have been imposed. The Columbia River Highway in Oregon had a provision when it was built that no sign was to be erected along its entire length. Other communities restrict signs to certain areas,

say within one mile of the city limits. One state considered taxing all signs within 1000 feet of main highways.

IV. Transportation Advertising

In addition to billboards along highways and railroad tracks, people riding public conveyances constitute a fine source of potential customers. It is estimated that over 40,000,000 people ride daily on streetcars, subways and elevateds, and buses, as well as a few million more using stations and commuting trains.

People using these forms of transportation rarely have anything to do. The trips are comparatively short, distractions many, and the jolting makes reading difficult. Even if with a friend, one hesitates to talk much with so many pressed about him. All in all, the ride is usually boring. Conditions are highly favorable for the advertiser. Attention is probably more spontaneous and of longer duration for almost any form of advertising. If seats are lengthwise, one has the choice of staring at someone opposite or looking over their heads at cards placed above the windows. In subways, where there is no scenery visible, as many as 50 per cent of people have been observed at a given instant studying cards.

Cards in commercial transportation vehicles have one advantage over all other forms of advertising except possibly the window display in a store. They hit shoppers, theatergoers, and to a lesser extent working people at the last moment before purchase, so can be used to apply the finishing touches.

In general passengers are a cosmopolitan group. This is especially true in large cities, where driving a car is a nuisance and even the wealthy prefer to ride the subway or elevated. Thus the advertiser can aim at the entire range of the purchasing public, which means that this medium is especially suited for products of mass use and low price—cigarettes, tobacco, chewing gum, candy bars; shirts, ties, hose, and other clothing of fairly frequent purchase; newspapers; foods.

Cards must be relatively simple, to be read from a distance, and from variable distances. With the standard size 11x28 inches, not many words can be read half the length of a car. So the structure is much like the highway billboard—chiefly a simple illustration,

color, and a few words. Since most people who ride do so a number of times a week, the effects of repetition are strong.

Commercial-vehicle advertising is usually sold by the month, and the advertiser usually displays a card in all, half, or a quarter of all vehicles in the city, or along certain routes. It is estimated that this form of advertising is the cheapest of all per reader, and that a greater percentage of the potential audience actually does see these cards than any other form of printed advertising.

After noting all these advantages, the reader might wonder why an advertiser does not confine himself exclusively to this form of advertising. This method does have its limitations. It only hits a cross section of readers in cities of 100,000 or greater, and hardly any in cities of less than 15,000 or 20,000. It only sells goods of slight or medium price. It is too broad for articles used by persons with special interests or for technical items. Finally, while attention is good, the reader's attitude is usually bored and impatient, if not definitely vacuous, hence concentration is not serious or deep.

V. Direct-Mail Advertising

Direct-mail advertising covers those forms of publicity which are delivered to the individual customer, rather than aimed in mass fashion toward whoever may see or hear it. It includes form letters stuffed into individually addressed envelopes, individually typed letters, and cleverly imitation-typed letters, also catalogues, enclosures, blotters, calendars, handbills, announcements, booklets and almanacs, package inserts, price lists, and many other forms.

The cost of preparing and distributing is probably higher than for any other form of advertising, but so also are the returns. This type seems more personal than others, more attention is paid to it, and many people hate not to act on the ad. It is the next best thing to a salesman's personal visit.

The list of potential customers (cynically called "sucker list") may be carefully worked out and revised from time to time, so waste may be minimized. Less selection is used and more waste occurs when names are taken from a city directory or telephone book, or letters are simply addressed to "Occupant, 1200 Broadway, City."

The value of a well-prepared and kept-up mailing list is seen in this statement by the late Julius Rosenwald of Sears Roebuck (7, p. 305): "If some unthinking catastrophe should come about tonight and wipe away all Sears-Roebuck buildings and merchandise, I should not worry especially, as long as our mailing list escaped. We could erect new buildings, buy new mechandise, and carry on at once; but if the names of our customers were lost, we should have to begin again from the very beginning."

The uses of direct advertising are many. One writer included: "As a pathfinder; as an introduction; as a salesman; as a reminder; as a goodwill buyer; as a means of increasing sales; as an elixir for active customers; as a tonic for sick customers; as a pulmotor for practically dead customers."

Direct advertising lends itself to timeliness, impersonal or personal. The first-named use is seen in handbills delivered to one's door calling attention to sales and specials.

Personal appeals are more possible in direct advertising than through other forms. Appropriate goods may be plugged after announcements of a birth, marriage, illness, death, son going to college, and other important family events appear in the papers. The very personal appeal increases possibility of a sale, since the recipient feels the salesman or merchant took individual pains, and he is likely to be somewhat flattered. Taste must be shown or the recipient may feel his privacy intruded, especially in cases of bereavement or serious illness, where relatives are made to feel that hosts of vultures are waiting to pounce upon their pocketbooks.

Another warning is that direct-mail advertising may be worse than useless if sent to the busy man. He may receive so much business mail that what is patently advertising goes into the wastebasket unopened, and, in addition to being wasted advertising, he may retain a hostile feeling toward that company for pestering him. Of course the person who gets little mail may feel just the opposite. The writer has heard a woman who lived along a lonely rural route beg a merchant to send her more circulars "because I get so little mail."

An individually prepared letter may be very timely, as seen in the following letter, sent by a tire dealer to an automobile owner:

"Dear Mr. —:

"I happened to park next to your Dodge [written in] the other day and noticed that you had several worn tires. I am writing you this line to see if there is any way we can fix you up. The following tires were worn smooth: right front, right rear [written in]. We can allow you from $2.75 to $4.50 on these in exchange for new —'s.

"Please drop in and investigate further our proposition, without any obligation on your part."

The personal touch and enterprise of this dealer hits one in a way that no general newspaper or magazine ad could do; and it far surpasses the usual form letter, even granted that it is form except for the write-ins.

A technical advantage of direct-mail advertising is that follow-up research is easy and clear. (1) Keying return addresses or supplying return envelopes enables checking which contacts result in sales. (2) Split-run methods can check value of different appeals. (3) Follow-up work and improvement of methods are easy.

Finally, it might be observed that while some companies rely exclusively on direct advertising, as a general rule it is used in combination with other more widely broadcast forms of publicity.

VI. Packages and Wrappers

We previously mentioned that the trade mark provides a link between advertising and the salesroom, since it furnishes a common feature appearing on both printed advertising and on the goods on display. This is especially characteristic in help-yourself grocery stores, 5 and 10's, and drug counters.

In terms of our five functions of a good advertisement, the trade mark aids memory. This—and we include along with the trade mark proper the characteristic shape, color, type face, and other features of the package—enables one to identify the desired package at a glance. Or we might say the advertiser hopes that the customer will recognize the package as familiar, whether he identifies it or not, and buy it. This value will aid conviction; the customer assumes without definitely putting it in so many words that a known brand must be superior to an unknown one.

In theory at least, and probably in most cases in practice, the customer who buys standard brands can depend upon uniformity

in quality, value, wear, taste, and sanitation. This gives the buyer greater assurance, makes his shopping that much simpler, and of course boosts sales for the producer of branded merchandise.

Containers which are useful for later service act as permanent advertisements for the company. Processed cheese is sold in jars which can be used for fruit-juice glasses or jelly jars. Mayonnaise jars with screw tops are useful in the kitchen and workshop. Cartons which are a little stronger built than most can be used for storage of clothing, wastepaper, or shipping—and everyone who sees them has the maker's name put in front of him. A certain coffee is sold in glass jars with screw tops, with a prominent appeal the reuse for canned fruit or vegetables.

Few suggestions as to design of package or wrapper need be given, since the field belongs to specialists, and combinations of color, size, shape, and printing are virtually infinite in number.

VII. Free Samples

Samples are the most direct form of advertising. One is given some of the actual product to use. If it is satisfactory, he tends to buy that brand. Proven satisfaction provides its own reward.

Factories are usually willing and eager to receive visitors, show them around, and often give away samples of the product when they leave. This is valuable in creating good will. As a furniture-polish manufacturer said, "Five cents' worth of oil is more effective than twenty-five cents' worth of printed advertising." A manufacturer of food products said: "Every person to whom we give food in our factory becomes a walking advertisement." He will not only use the goods, but he will tell his friends of the kindly treatment he received.

The writer once had an experience of this nature. When starting a tour of the Eastman Kodak plant the official to whom I was talking noticed a bulge in my coat pocket, and said, "I'm sorry, but our rules forbid anyone taking a picture in the plant." I replied, "Not much danger, this camera is out of order anyway." "Would you like to have it fixed? I can put a special on it and have it ready when you leave tomorrow evening." The next day the camera was brought back, practically rebuilt, and when I asked the price was told with a smile; "Oh, nothing at all. We like to do

small favors." It is obvious that this incident made such a favorable impression on me that I have mentioned it to a number of classes and now am passing it along to readers of this book. Was that not very cheap advertising in the long run?

Gifts of items other than the product itself might be mentioned. Among these are painters' caps, carpenters' aprons, newsboys' T-shirts, shopping bags, baseball uniforms, bowling shirts—all with name of the donor's store or product emblazoned prominently.

A query might be raised as to the type of patronage attracted by offers of free samples in advertisements or over the radio. It seems unlikely that anyone who is fairly well fixed financially will bother to clip, fill out, and mail in the coupon just to receive a small sample. Yet it is possible that if the article is in common use, as soap or breakfast food, volume will make up for lack of large orders. We might also wonder whether asking "a dime to cover cost of handling and mailing" may not be short-sighted. If one decides to send out samples, he might as well do it magnanimously, and not try to salvage a few dimes.

VIII. Assembly Advertising

Where groups are gathered, a new field for publicity is opened up. We can list such devices as slides and shorts in movies, advertising on theater programs, free lists of players and their numbers distributed by a store or product at a game, prominent signs painted on outfield fences with perhaps added attraction of offer of a free suit or hat or carton of breakfast food for every player who hits one against the sign, and previews of coming attractions. Some companies loan to organizations movies featuring manufacture or uses of their products, and may even have educational films on such topics as salesmanship. This may be termed institutional or good-will advertising.

In a movie, or before the curtain goes up in the theater, attention is exceptional. There are no distracting influences, and one must shut his eyes if he does not wish to watch the screen. Since he does not want to miss any part of the show he usually watches, even if a little begrudgingly.

The typical movie consists of a main feature, a newsreel, and a comedy or animated short. Sandwiched between these is advertising

of various sorts. Coming attractions have largely replaced advertising of outside products. But in neighborhood and small-town theaters one sees slides and filmed ads. One sees a man coming home at night, sinking into a chair and exclaiming how tired he is. Whereupon his wife says to him, "Well, dear, put on these slippers I got at ——, and after you have eaten a steak from ——'s market, and settled down in your —— armchair to smoke a pipeful of —— tobacco and read —— magazine, I am sure you will feel more rested." About then we begin to suspect we are seeing advertising, not the feature.

IX. Radio

Radio publicity is unique among all major forms of advertising in that it appeals to the auditory sense. Other major forms we have discussed are visual. There have been isolated attempts to appeal to other senses. In one instance a city-newspaper advertisement for a perfume had some mixed in with the printer's ink, but it must be admitted the smell of ink was more prominent than the perfume. Helena Rubenstein once used bath salts to melt the snow in front of her salon in New York City. Free food samples aim at the gustatory and olfactory senses. Samples of material permit feeling. But such departures from the visual are few and unimportant.

Radio broadcasting started as a novelty, with station owners deriving only good will. But as the field expanded programs of a quality beyond a private individual's means were demanded by the public, so time was sold on the same basis as newspaper or magazine space. The next step was the network, where a feature is carried on from several to more than a hundred stations. It is estimated that 50,000,000 listeners have heard important presidential addresses, and nearly that many hear world's series and championship fights. Some regularly scheduled programs draw as high as 10,000,000—twice as great as the circulation of any magazine or newspaper.

As we know, in the United States programs are commercially sponsored rather than governmentally controlled and tax supported. This means that the sponsor's name naturally has to be mentioned from time to time, and some benefit—direct sales or good

will—must accrue. With competition among products mere mention is not enough, so like it or not we are forced to listen to commercials.

At the same time even a modest receiving set can pull in at least half a dozen stations, so there is a practical limit to the length of commercials before one will turn the dial in search of a program which is featuring entertainment at the moment. One can change the radio tuning more readily than he can swap magazines, if he finds the offering distasteful.

A poor program may create a feeling of "I won't buy that after hearing it plugged last night in such nauseating fashion." With a good program and advertising done in tasteful manner, one may feel, "I don't know much about the goods, but I feel after hearing that wonderful program as if I should patronize that sponsor."

It is estimated that attention starts to wane after 50 words of talking. Only between rounds of a fight or innings of a ball game can one risk more. Even here, although interest is sustained, abuse will create ill will. A nationally known announcer was removed from further broadcasting of football games after a storm of protests poured in against his indiscriminate boosting of Southern California climate all during a New Year's Day game, including once while a touchdown was being scored.

As have some other fields of advertising, the National Association of Broadcasters revised their own code of ethics in 1947. On day programs they agreed to limit commercials to 1 minute on a 5-minute program, 3 out of 15, and 4.5 minutes in a half-hour session. At night the limits will be 3 minutes in a half hour, and 6 on a full-hour program. Commercials are not to interrupt a news program of less than 15 minutes. The character of shows is also self-restricted, with elimination of certain kinds of advertising, reduction of crime, horror, and kidnaping stories, and avoidance of morbid crimes and sex-news stories. In actuality, these are not limitations but merely agreements in advance of threatened boycott.

These latter censorings are due to another unique character of radio listening. It is primarily a home and family entertainment, and a man will not want his children to hear material of a nature that he might read by himself, or even tolerate in the movies while

he is sitting in the dark. Hence radio undoubtedly has the highest moral tone of all disseminating media.

Commercials can be handled in various ways. We expect them at beginning and end of a program, and usually at the 15-minute break of a half-hour program, which at present is the most popular length for a major attraction. In addition, the name of the sponsor or product may be worked into the dialogue more or less cleverly. In a program having family life as its scene, it is not too far-fetched to bring in floor wax, coffee, soft drinks, or foods. Sports broadcasts have natural pauses which can be capitalized on by a glib announcer. A boxer in good form is "sharp as a Gillette Blue Blade," or a man who just hit a home run "must have had an extra bowlful of Wheaties this morning." A honeymoon couple on a cross-country trip would now and then remark "We're low on gasoline; let's go into this nice clean-looking Shell station."

A. Radio Research

Studies, directly or indirectly pertaining to broadcasting, have appeared by the dozen in recent years—perhaps as many as on all other forms of advertising combined.

The first problem is how well, and in what manner, people learn by ear. All other modes of advertising depend on the eye, and this field introduces a new set of problems. A second is a question of attitude. Radio listening resembles magazine reading in that it is used primarily for entertainment. In both media serious articles and serious talks are in the minority.

It is this matter of attitude which has led some to be skeptical of radio ever becoming a strong educational force. It is difficult for one to change his usual set of being amused to that of serious listening. Otherwise, with exceptions of visual aids and laboratory work, most courses could be given over the air as well as in a lecture room. A few studies have been made which showed little difference in amount learned, as measured by objective-type tests, between persons listening at home and in class (*3*). But it is argued that those listening over the radio may have concentrated extra hard to show that they are not handicapped, and that such strenuous efforts might diminish in day-after-day listening.

Other research in radio has involved such topics as types of pro-

grams preferred, feelings toward announcers, attitudes of announcers, how much attention is actually paid (housewives in particular may leave a station on for hours to combat loneliness, without hearing one spoken word), how many people choose programs versus tuning in one station and leaving it on all evening, the day and evening coverage of a given station, percentages of those listening to a certain program week after week, stations and programs heard by persons of different economic status, effects of political programs on voters' choices, effects of radio music on sale of sheet music of popular songs, sales results of programs and attendant advertising, attitudes toward various kinds of advertising, and many others.

Factor analysis was applied to one study on program preferences, to see what common factors there might be. For instance, one who listens to a church service on Sunday rarely confines himself to that one hour a week. Just what else does appeal to him? What does a sport fan select when no game or fight is being aired? What does a soap-opera enthusiast hear in the evening? After doing factor analysis of 18 types of programs, the investigator (*6*) concluded that there were two principal factors, which he named "dramatic" and "inspirational." (1) The drama factor included sports, comedy, dramatized news and plays, and quiz programs. (2) The inspirational type involved forums, religious programs, news commentators, folk and band music, sweet dance music, serial stories, and programs on personal problems. (3) There was a third rather weak factor which included serial stories and personal-problem programs and which has serious music as a negative factor—in other words, those who liked serials and personal problems disliked symphony and those who liked symphony or opera did not care for the other two types.

Such a study as this suggests possible programs for makers of certain types of goods to sponsor. Suppose one who had been broadcasting football games decides to advertise more than once a week; what should be his second program? If he chooses to aim at the same type of audience, he has the range of dramatic possibilities contained in Factor 1. If on the other hand he wishes to open up a different audience he should try Factor 2—the inspirational type.

B. Choice of Program

This, then, brings us to discussion of proper type of program. Actually the choice is pretty wide open. There are wide disparities such as the Metropolitan Opera sponsored by an oil company, but there are some limitations in tying up product with audience. We would not advertise perfume and chewing tobacco with the same type of entertainment. Nor would many of the "gum-chewing public" listen to symphony, nor a symphony audience appreciate a deodorant or other intimate drug product.

Many tie-ups are logical enough. Many children's mystery and adventure programs are sponsored by breakfast food, candy bar, and milk companies. Household goods sponsor the "heartthrob" and "soap-opera" programs heard principally in daytime. Men's hats and razor blades have sponsored fights and other sporting events. These are logical enough for the probable audience. If a laundry soap sponsored a boxing match, the program would still be popular enough, but the results nil. So quality of program is only the first problem.

It is instructive to note that those products for which the largest amounts are expended in network advertising are:

1. Drugs and toilet goods
2. Foods and food beverages
3. Laundry soaps and household supplies
4. Cigars, cigarettes, and tobacco
5. Confectionery and soft drinks

It is easy to generalize that these are all inexpensive, frequently purchased, and used by almost every family. Yet there are exceptions—the largest automobile companies have gone in extensively for radio advertising, and their products are far from cheap.

C. Measuring Effects of Radio Advertising

Few companies rely solely on radio publicity, so effects are not easy to measure, yet the task is no more complex than for most other forms of advertising. One manufacturer used the split-run technique, plugging one of his products in one section of the country and another in a second area. A detective-story magazine in-

creased its circulation from 190,000 to 690,000 copies by six months of radio advertising. A small-loans company in Chicago so increased its business that after a few months' trial it felt warranted in still further expanding its radio publicity.

Sales volume reflects only in part the popularity of the program, as it is complicated by other variables. Sales may be checked through store purchases, but if one really wants an accurate measure of radio effectiveness, he will have to suspend all other advertising, or keep it at a constant level, as in any other type of controlled experiment. Perhaps the most direct measure would be to sell only by mail in response to radio advertising: "Send one dollar and you will receive postpaid . . ."

Dr. Stanton, now president of the Columbia Broadcasting System, made a controlled check on sales among regular listeners, occasional listeners, and nonlisteners (8). As Table 69 shows, 100 is

TABLE 69. Influence of Listening to Program on Sales of a Widely Used Article

	Sponsor's Brand	*Next Competing Brand*
Listening families	181	100
Nonlistening families	107	100
Regular listeners	336	100
Occasional listeners	159	100

used as a standard figure to represent sales of the next most widely bought competing brand. We see that the sponsor's brand is in the lead by a 107:100 ratio even among nonlisteners, that listening families buy it nearly twice as often, and those who listen regularly buy it three and a third times as often as the control group.

D. Noncommercial Radio Publicity

Noncommercial radio publicity is another use of radio. Attempts are made to influence public opinion, either prior to election or by speeches or dramatic sketches as crucial issues arise. These may be on the part of the government (party in power) or they may be paid advertising by the party on the outside at the moment. Similarly, there are frequent speeches for or against pending legislation, labor-management issues, racial and religious problems, foreign aid, pub-

lic improvements, desirable forms of education, and a host of other problems.

X. Interutilization of Advertising Media

Not only do advertisers boost sales by employing several kinds of publicity devices simultaneously, but one form of advertising may be used to supplement another. Let us mention some of these interrelationships:

1. Newspapers own radio stations, and give news flashes frequently, to stimulate sales of their papers. They also sell other time for revenue purposes.

2. "March of Time" on radio, to sell a magazine.

3. Magazines advertise in newspapers. *Saturday Evening Post* and *Reader's Digest* publish on days of issuance titles and a few hints about leading articles.

4. Radio stations hire billboards telling one to listen to that station—aimed directly at car radios, of which there are about 9,000,000.

5. Magazines use direct-mail solicitation.

6. Newspapers and magazines advertise elsewhere to solicit advertising.

7. "Send-for-our-catalogue" appeals in newspapers, magazines, or over the radio is a use of those forms to get names for direct-mail advertising.

8. Coupons offer free samples; one form advertises another of a little more direct nature.

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CHAPTER XXV

RETAIL SALESMANSHIP

I. Definition and Problems

A. Definition

Salesmanship is the process of using verbal persuasion to induce a person to buy some commodity or some service. This differs very little from a definition of advertising, except that the latter is ordinarily printed, while salesmanship is carried on by the spoken word. A cynic has altered this description to: Persuading someone to buy that which he does not want, does not need, and can't afford! While some high-pressure salesmen may use such tactics, those with ethics and desire to build up a steady clientele will urge only articles that are appropriate for and are needed by customers, and which they can afford.

B. Salesmanship and Advertising

Salesmanship and advertising are alike in most essentials. Both have as their general task the arousal of interest and enthusiasm so that the prospect will be motivated to purchase. However, the salesman enjoys a number of advantages which are denied the advertiser. These center around the fact that the salesman can make personal contact, while the advertiser works impersonally and must aim at mass selling.

1. The retail salesman knows when a person enters a store that he is at least mildly interested. So usually he does not have the problems of attracting attention and arousing interest.

2. Since the salesman is talking to one individual at a time, he can aim his arguments much more specifically than can the adver-

tiser. The advertiser must plan his copy in terms of the so-called average reader of the medium he is using. This has been compared to using a shotgun, whereas the salesman can use the more precise rifle.

3. The salesman can change his arguments at any stage of the conversation, while the advertiser's appeal is stated once and for all. The salesman can shift emphases, plug a different product, and answer questions and objections.

4. Salesmanship might be said to contain more psychological problems than advertising (not to suggest that the latter does not contain much psychology), since it involves many social relationships in the interactions between two human beings. The salesman's behavior, manners, appearance, speech and even health all have bearing on his success. Two salesmen may use the same identical words, but one makes the sale and the other fails.

C. Types of Selling

Most of the discussion in this chapter will concern itself with problems met by the salesman in a retail store, where the customer comes to him. In contrast to this we have other types where the salesman calls on the prospect, a wholesaler calls on a buyer, a life-insurance salesman hunts up a prospect, or one sells from door to door (see Chapter XXVI). But most problems of selling are similar, regardless of the type.

In Chapter XXVII we shall discuss the customer's side, from standpoints of technique of buying, getting one's money's worth, and consumer surveys.

II. Improving the Quality of Salesmanship

One who has studied salesmanship and is sensitive to good and poor sales techniques is constantly shocked by the poor quality of selling he encounters daily.

It has been estimated that from two thirds to three quarters of sales transactions are not really sales, but purchases initiated by the buyer. After all, one cannot honestly say he has made a sale if he has merely made change and slipped the goods into a bag. But he has definitely created a sale if he digs out a prospect who

is indifferent, convinces him that he needs the goods or services, and sells him the particular brand he is handling.

The writer is convinced, on the basis of much study and observation, that the outstanding fault of most salesmen is insufficient knowledge of their goods. Automobile salesmen are among the worse offenders. Although they sell a product worth around $1500, how many know much more than what colors and body styles are available? Ask fifty auto salesmen how many crankshaft bearings there are, what is the bore and stroke, or what is the difference in gear ratio between high and second gear, and see what percentage give an adequate answer. Once when I was contemplating trading in for a new car, I asked the salesman to give me an itemized statement of the difference of $250 between the advertised and delivered prices, and was able to gain nothing more than: "Oh, that's for the spare tire, and that sort of thing." I never could find out what "that sort of thing" was, or what it cost. He was surprised when I suggested that in a transaction of many hundred dollars he ought to know more than black or green paint, and two- or four-door sedans. With that quality of salesmanship, the wonder is not that we have hard times, but that they are as good as they are so much of the time!

A second common failing is in treatment of customers. This is perhaps most conspicuous among veteran clerks in small town or small city stores. They have diminished enthusiasm, feel their positions secure, and don't have the pressure that is felt in large city stores. So they finish their gossip before approaching a new customer, fail to greet a second while waiting on the first, show marked lack of enthusiasm in both customer and goods, and are unobliging about taking care of special orders or of some customer whose needs are unusual and hence necessitate extra effort.

Yet selling pays highly. The super salesman can earn truly prodigious commissions, especially in terms of the short learning and training necessary, as compared say with an engineer who needs several years of tough technical schooling. The writer knows one company whose sales manager is paid $50,000 a year, and whose chief engineer earns $7500.

Perhaps part of the source of poor salesmanship is in selection. Those who are temporarily unemployed in their regular line of

work or who have very vague vocational ambitions can drift into selling as a stopgap. The formal training and breaking-in periods are brief, and if one is paid principally by commission the employer loses little if the seller turns out to be mediocre. But many salesmen are excellent, and more can be rendered so by proper selection and adequate training.

III. Selection of Salesmen

A. Necessity of Selection

We have already pointed out that the field of selling tends to be flooded with mediocre persons, but we realize that efficiency is as necessary here as in factory or office work. But poor salesmen, even if they are on a purely commission basis, work adversely to themselves, their companies, and customers. So we ask, Who makes a good salesman? What are the traits which distinguish the good from the mediocre salesman? Is there a definite sales type? Is a salesman "born" or can the qualities be learned?

B. Is There a Sales Type?

Authorities agree that there is no single clearly defined sales type, regardless of all the remarks we may hear, such as "typical salesman," "born salesman," "cut out to be a salesman." Anderson, after an extensive study which we shall discuss, comments: "It is obvious from the study that good sales people do not possess traits and tendencies wholly absent in poor sales clerks, or that poor sales clerks are not handicapped by conditions that are never found among good sales clerks. There is no clear-cut, sharp dividing line, of such a nature that it separates absolutely good from poor sales material." So we must discuss trends and probabilities, but these are important and profitable for selection purposes.

As there is no typical salesman, not all selling positions demand the same characteristics. Certain common traits may be desirable, but there may be material differences between successful salesmen of automobiles and jewelry, sporting goods and household appliances, and in wholesale and retail selling.

There actually has been a good deal of research for the purpose of selecting potentially excellent salesmen, probably more than

toward selection in any other occupation. Those attributes which have been profitable to study are:

Personal data, principally from application blank
Interview data
Past records, from recommendations, investigation, job performances
Educational records
Intelligence scores
Personality-test scores
Interest-test scores

C. Desirable Traits

Anderson (*1*) conducted a thorough study of high- and low-cost-of-selling clerks in a New York City department store. Low-cost-of-selling persons were those who sold large dollar volumes per dollar paid them while the high-cost salesmen were those whose costs were larger than average for the sales they brought in. Presumably all clerks studied were worth continuing in employment and were earning a living wage (salary plus commission), so comparisons are not between utter failure and success. Comparisons were made between the best and poorest quarters, omitting the middle 50 per cent.

Extroversion appears to be the outstanding personality characteristic of the good salesman. The extrovert can meet strangers more readily, is a ready talker, is adaptable, is dynamic, and is more ambitious materially than the introvert. Anderson found that 54 per cent of low-cost salesmen were extroverts, while only 11 per cent of high-cost clerks were so rated by their several supervisors. On the other hand, the introverts furnished 40 per cent of high-cost salesmen and only 10 per cent of low-cost clerks.

Ninety per cent of the best salesmen in each department were rated as having good initiative, while at least half of the poor salesmen were rated as only fair or lacking in this trait. Enthusiasm and confidence are similar traits. One must be sold on his product and have confidence in it and in himself to do his best work.

Intelligence has a rather peculiar relationship to sales success. We saw in Chapter III that there were material differences in

averages of several groups of salesmen handling products of various levels of complexity. This study, plus the almost complete lack of correlation within any single group of salesmen between intelligence and sales volume, suggests that one need only have sufficient intelligence to understand his product, and that any further mental acumen is unessential. To sell harvester combines, printing presses, business machines, or similar technical articles, one needs to be of above-average intelligence. Possibly, too, the salesclerk should be up to the average of his customers, which may vary from store to store, even when selling the same merchandise. In Table 70 we quote a survey made by Anderson on 500 clerks in the city department store. The average we observe is rather low,

TABLE 70. Intelligence Distribution of 500 Unselected Sales Clerks

Intelligence		*Number*	*Per Cent*
Superior	(IQ above 110)	27	5.4
Average	(IQ 90-109)	203	40.6
Dull average	(IQ 80 89)	172	34.4
Subnormal	(IQ 70-79)	78	15.6
Borderline mental defect	(IQ 60 69)	20	4.0
Mental defect	(Below 60)	0	0 0

a level we would associate with less than full high-school education, but of course is adequate for most department-store merchandise. Further, Anderson observed that several low-cost (desirable) clerks rated among the lowest in their departments, individual analysis showing that favorable personality factors more than compensated for lack of individual brilliance.

Amount of education bears no relationship with success, although it is possible that as with intelligence, a higher degree is necessary if one hopes for promotion.

Years of selling experience are not too essential either, except for certain specialized goods, in which case thorough knowledge may be as important as sales experience. For example, a golfer or artist with the proper personality traits could be taught the fundamental principles of selling and do superior work within a few weeks. The writer's observation in department stores suggests that three to four weeks is adequate to bring most new salesmen up to a good productive level. Possibly, to refer to intelligence again,

the brighter will attain this point more quickly, being more rapid learners; but those with just average intelligence will be just as proficient when they have learned their merchandise and sales techniques and practices.

A few minor points follow. Married men do slightly better than single, but this may suggest greater maturity and stability, as well as more motivation. The 25-50 broad age range is best. Average and greater-than-average vigor contribute to being in the low-cost-of-selling group.

By way of summary, Anderson says: ". . . The low-cost-of-selling employee is predominantly an extroverted, active, alert, aggressive, convincing, ambitious, responsive, pleasant, and well integrated individual, while the high-cost-of-selling employee is more frequently likely to show such characteristics as introversion, underactivity, tendency to mental revery, lack of ambition, unresponsiveness, instability, and the like." He summarizes his findings in the form of recommendations, quoted in Table 71.

TABLE 71. Personal Qualifications of Salesclerks

Age: Men, 22 years or over; women, 18 years or over.
Schooling: men, public school graduate; women, 1-2 years high school preferable.
Work experience: not necessary in most departments; exceptions are such departments as clothing, sporting goods, oriental rugs, shoes, diamond jewelry.
Physical condition: freedom of movement of arms and legs; freedom from flat feet, good eyesight and hearing; good vigorous general health; height, women 5.5, men 5.8; normal blood pressure.
Special abilities: legibility of writing, fair or good; arithmetic, fair or good.
Personality: General—alert, active, stable, well-integrated, good attitude; Special—likes contact with people, interested in selling, aggressive, convincing, extrovert or ambivert, pleasant and agreeable contacts, good appearance, able to inspire confidence, poise, able to talk well, adaptable to different personalities, responsiveness.
Intelligence: IQ, 89-100.

D. Personal Items

Personal items deduced from application blank and interview have been used with success in predicting success of salesmen. Oh-

mann (7) determined statistically weights to use in selecting salesmen for a building-materials manufacturer, a few sample figures being 10 points for having stayed from six to ten years on the last job, 5 points for being married, 6 for having no more than current debts, and 7 for being 39 or less years of age. A total of 62 was established as the critical score, which was confirmed by the experience of the company that 70 per cent of those scoring above this figure were still working for the company two years later, while only 30 per cent of those under 62 points were still employed after that lapse of time. The correlation between total score and earnings during one calendar-year was +.67. It might be remarked that 6 of the 31 original items on the application blank were found impossible to rate objectively, and twelve more were discarded because they did not differentiate between the upper and lower halves in sales success. The thirteen remaining items did a good job of discrimination.

A similar study predicted success of *Encyclopædia Britannica* salesmen to the extent of +.54 with sets sold (*11*). A weighted scale was devised using these factors: age, height, marital status, number of dependents, thousands of insurance, years of education, number of clubs, number of offices held, years selling experience, years on last job, reason for leaving last job, average monthly earnings on last job, rent or own home. This weighted scale was verified by applying it to 100 new men, and two thirds of the predictions fell within one standard deviation of their actual production records.

E. Test Scores

Test scores on various personality and interest blanks have been obtained in quite a number of surveys of sales selections and success. The writer in one such investigation (*3*) gave personality tests to 100 successful retail-store salesmen in various stores in two medium-sized cities. Their average age was 30, with 10 years of selling experience. Their scores were compared with college students on the same test. The test used was the Wisconsin Scale of Personality Traits, devised by Stagner. It contained 125 items which are scored in terms of four major personality dimensions: neurotic tendencies; introversion; self-confidence; and a fourth trait which is impossible to describe by a single term, but in which a high

score means that one is averse to social contacts, prefers intellectual over social or athletic activities, and tends to be submissive in a crowd.

The test scores are quoted in Table 72. One can judge for himself by the description of the traits listed above just how the sales-

TABLE 72. Comparison Between Salesmen and College Students in Personality-Trait Scores

		W	*X*	*Y*	*Z*
College	M	337	376	442	377
	σ	47	36	46	32
Salesmen	M	317	369	477	390
	σ	42	36	39	33
Critical ratios		3.76	1.64	6.71	5.26
Probabilities (that the higher group is truly higher)		999	945	999	999

men differed from college students, who should be entirely representative of the population at large. It is interesting that the trait in which there is the least difference is that of extroversion, yet this is the one almost universally suggested as most important for successful salesmanship. At the same time it may be that college students, with their active social life, are more extroverted than the average of the population. In the other three traits the salesmen were definitely less neurotic (or better balanced), had a greater degree of self-confidence, and were less socially inclined than the college group (which also is surprising).

Interest tests have shown promising results in selecting salesmen, especially in the field of insurance. We have already mentioned several such investigations in Chapter V. In one other study (2) casualty-insurance men were measured on the Strong interest test and on an intelligence test, and each correlated mildly with success. The scale which predicted best was that for CPA's, which gave a coefficient of +.38 with a combined success index of sales and ratings for service rendered. In a second study (9) salesmen for business machines could be differentiated from men-in-general, but success in selling could not be predicted until a new scoring scale was devised from responses by good and poor salesmen. Then the

distributions of the two groups showed only a small amount of overlapping. The same results were obtained for servicemen for this same business-machine company, when a scale was built-up to differentiate these men from men-in-general. Degree of success was predictable here also.

IV. Training Salesmen

There are three major directions in which the potential salesman must receive training: (1) Knowledge of the goods, commodities, or services he is selling. (2) Knowledge of how to take care of the technical aspects of the sale and how to handle transactions of all types. (3) How to handle and deal with customers most effectively. The first two requirements are obvious. Even the experienced salesman must learn the merchandise and methods when he becomes associated with a new store or starts to handle a new line of goods. Training is also necessary to make the individual more effective. He may be what is called a "natural salesman" in being able to meet people well and in having fine persuasive powers, but without special training he will waste much time and handle fewer customers in the course of the day. Having full command of the technical aspects of the sale frees him for the more psychological and social contacts.

Training may take anywhere from a few minutes to several weeks. In small stores there is no formal training program; the new man is just turned loose and if he gets stuck he asks the owner or an older clerk to help him out. In city stores the customers are more demanding and business is conducted at higher pressure, so the clerk must have a good idea of what he is about before he can be given full powers as a salesman.

1. Knowledge of the goods in the store will have to be acquired chiefly on the floor. The clerk can study the prices and specifications before and after work, ask other employees during the day if he cannot answer a question asked by a customer, and even learn while waiting on purchasers. A large department can mimeograph lists of items regularly carried and have on hand catalogues of major manufacturers.

If the salesman is to deal with a line of rather specialized items, such as automobiles, tractors, factory machinery, electrical equip-

ment, or calculating machines, a more thorough training course will be necessary. A man must know not only the price and leading external features, but also the internal mechanism in detail. It is true that many automobile salesmen are sent out on the floor with the scantiest technical knowledge, but this means only that their sales training is distinctly insufficient, and that customers are buying rather than being actively sold.

2. The new employee is taught all the routine phases of his work. The writing of sales checks is the major item under this head. Different types of checks are used for various kinds of orders: paid-taken, charged-taken, paid-sent, collect, etc. One must be careful, in the case of delivered goods, to get the name, initials, street address, and apartment number of the customer. The correct names of the articles purchased, the quantity, and possibly certain technical details must be filled in properly and completely. In stores having centralized cashier rooms, slips for different kinds of transactions are sent down in different-colored containers. Those involving cash will need immediate change, while those of the charged-delivered type call for no special haste. Charged-taken purchases demand immediate verification from the files. Collect transactions naturally do not appear in the cash room until delivery has made the collection.

Service is speeded up if the clerk knows just what to do in all cases, particularly when the customer requests that an item be delivered on a certain date or sent in a special hurry, if a check is presented by an unknown person, if partial payment is made, or if other infrequent type of transaction arises. He must also know how to handle exchanges and refunds.

Instruction along these lines is valuable not only for teaching the clerk what to do, but in enabling him to perform these operations semiautomatically. He can talk to the customer while engaged in writing out the check, and speed service that much. Efficiency also gives the customer a better impression. If the clerk is unable to handle routine details without constantly asking his supervisor, one will doubt whether he knows his goods thoroughly.

3. Methods of handling customers are also suggested. Appropriate greetings, methods of presenting arguments, ways of displaying goods and of suggesting additional purchases, are discussed. These

situations are social, and as such are so variable that instruction is necessarily incomplete. A person cannot acquire social smooth-

FIRST WEEK

Day	Time	Subject	Place	Conducted by
Monday	.....	DAY OFF	.....	
Tuesday	9:15 - 9:45	Induction	Lounge & 8th Fl.	Training Department & Supervisors
	9:45 - 12:30	Department Orientation	Own Department	Sponsor
	12:30 - 1:30	Lunch		
	1:30 - 6:15	Store Orientation	16th Floor	Training Department
Wednesday	9:15 - 11:00	Department Orientation	Own Department	Sponsor
	11:10 - 1:10	Selling System I	16th Floor	Training Department
	1:10 - 2:10	Lunch		
	2:10 - 4:15	Selling System I	16th Floor	Training Department
	4:15 - 6:15	Department Sponsoring	Own Department	Sponsor
Thursday	9:15 - 11:00	Department Sponsoring	Own Department	Sponsor
	11:10 - 1:10	Selling System II	16th Floor	Training Department
	1:10 - 2:10	Lunch		
	2:10 - 4:15	Selling System II	16th Floor	Training Department
	4:15 - 6:15	Department Sponsoring	Own Department	Sponsor
Friday	9:15 - 11:00	Department Sponsoring	Own Department	Sponsor
	11:10 - 1:10	Selling System III	16th Floor	Training Department
	1:10 - 2:10	Lunch		
	2:10 - 4:15	Selling System III	16th Floor	Training Department
	4:15 - 6:15	Department Sponsoring	Own Department	Sponsor
Saturday	9:15 - 6:15	..... SELLING IN DEPARTMENT		

SECOND WEEK

Monday	9:15 - 10:15	Principles of Selling I	16th Floor	Training Department
	10:15 - 6:15	..... SELLING IN DEPARTMENT		
Tuesday	9:15 - 10:15	Principles of Selling II	16th Floor	Training Department
	10:15 - 6:15	..... SELLING IN DEPARTMENT		
Wednesday	9:15 - 10:15	Principles of Selling III	16th Floor	Training Department
	10:15 - 6:15	..... SELLING IN DEPARTMENT		
Thursday	9:15 - 1:00	In Department		
	1:00 - 2:00	Lunch		
	2:00 - 3:00	Conference	Per. Rep. Office	Personnel Rep.
	3:00 - 6:15	..... SELLING IN DEPARTMENT		
Friday	9:15 - 11:00	In Department		
	11:10 - 1:10	Selling System Review	16th Floor	Training Department
	1:10 - 2:10	Lunch		
	2:10 - 4:15	Selling System IV	16th Floor	Training Department
	4:15 - 5:15	Telephone Practices	16th Floor	Training Department
	5:15 - 6:15	..... SELLING IN DEPARTMENT		
Saturday	.....	DAY OFF	.....	

FIG. 48. Initial Training Schedule for Salesclerks in a City Department Store. (Courtesy R. H. Macy and Company.)

ness and tact in a several-day training course. The problem then becomes largely one of selecting salesmen from a standpoint of their present social qualities and of giving them a few hints on conduct in a number of common sales situations.

4. Follow-up work is included in the training program, even though it occurs after the individual has been allowed to start selling. The buyer or supervisor notices his methods and gives him suggestions on refinement of techniques. A representative of the training department may visit him and talk over any difficulties he may have. He may receive additional technical instruction about certain types of goods. Finally, if he gets into trouble, a pleasant and constructive talk will straighten him out before anything serious happens.

As a concrete example of a thorough and well-organized department-store training program, we reproduce in Fig. 48 the schedule assigned to newly hired salesclerks over the first two weeks of employment in a large city store. One notices that in general the first week is split, half being instruction in the training department and half devoted to orientation in one's own department, and during the second week he receives instruction only an hour a day and sells the rest of the time. During the first week instruction is principally on technical points, largely making out the salescheck, and during the second week instruction aims at the psychological side of selling.

Most stores with a comprehensive salesman-training program administer a test at the end of the formal instructional period, and the new employee is not given his salesbook unless he earns a certain minimum score on this test. If he fails, he will receive further training and a second examination.

V. Steps in Selling

In most sales beyond the simplest "pick up and get change," there are several stages, which are in chronological order:

1. Finding prospect
2. Preapproach: securing information, getting appointment, etc.
3. Greeting
4. Sizing up customer
5. Presenting arguments
6. Answering objections
7. Closing sale
8. Follow-up and service work

The relative importance, and even the bare use, of these stages depends upon the type of goods and the previously determined purposes of the customer. In retail selling, the first two steps are absent, or rather one might say that the customer himself has taken care of them. In selling insurance, these same two steps are of major importance. Closing is a major item in selling an expensive item, where the customer naturally hesitates to take the plunge. Follow-up and service work is important where later sales are important, as of automobiles or men's suits.

VI. Essentials of Successful Salesmanship

These three points are indispensable qualities of the successful salesman:

1. Knowledge of the goods
2. Confidence in and enthusiasm for the goods
3. Work in proportion to the size of the sale

A. Knowledge of the Goods

Knowledge of the goods is the most important factor in effective selling. Without it no one, no matter how strong his personality characteristics, can be more than moderately successful. The following exhortation illustrates the value of the salesman's knowing his goods thoroughly (*4*): "Know your goods and know their values, because people seldom see what they look at; they see only what they have been educated to see. Whenever you are trying to sell a customer, do not for one minute take it for granted that he sees the difference between the low-priced article and the high-priced article. He often does not see it until you point it out to him."

Complete knowledge is particularly important in selling items of high price and high quality. One must be able to show in what ways his brand is superior, is of better appearance, will give better service, will last longer, etc. With certain types of goods, such as antiques or Oriental rugs, it is often necessary to educate the customer on their unique merits before one can attempt to make a sale. In such a case statement of price must be avoided if at all possible until the prospect is prepared.

Modern specialization is another reason why the salesman must

possess a thorough knowledge of his goods. With the wide variety of goods on the market, the complexity of many of them, and the distance away from the manufacturer, it is impossible for the customer to know much about the majority of them. He therefore must rely on the salesman's knowledge and his integrity in presenting the product.

Knowledge of goods covers quite a variety of items: prices, colors, fabrics, styles, sizes, grades, technical and mechanical specifications, size folded and open, ease of adjustment, power demanded, cost of operating, cost of repairs, accessory equipment, guarantees, discounts for large purchases, delivery and shipping specifications, possibilities for special orders, etc.

Strong (*10*) gives graphic instructions for analyzing a product: "Weigh it; smell it; taste it; pound it; take it to pieces; put it together; listen to it; squeeze it; shake it; roll it; spread it; pour it; bite it; file it; whittle it; burn it; freeze it; soak it; saw it; cook it; eat it; kick it; run it; stop it; bang it."

While we would not recommend following literally all these drastic suggestions, the principle is sound. It means that one should study the article from all possible angles of structure, use, and manipulation.

The following quotation shows how one salesman suddenly realized the importance of full knowledge of his goods:

"This morning I received about the best lesson in salesmanship I have ever gotten—all in one remark. We received a small shipment of imported alcohol cooking-stoves, at which I took a glance and turned to something else I wished to do before the store opened. I noticed Mr. Perry, the experienced salesman with whom I was working and who had been assigned to break me in, was inspecting them in some detail. He not only studied the price and general features, but he took them to pieces and put them together again, and read the printed directions carefully.

"I asked him jokingly why he was so interested in that item. He answered: 'About 9:30 I know just what will happen. You will call over to me, "Oh, Mr. Perry, how do these stoves work?" and I won't tell you.'

"That remark set me thinking. I realized that I have been asking him a lot of unnecessary questions. I had been banking a little too heavily on my newness as a clerk and on his experience. I realized that the only way I would get a complete knowledge was by study; the facts wouldn't soak in by themselves. So I started systematically to learn the merchandise

in our department, filling in time before the store opened in the morning and spare time during the day. I found that I soon became much more independent, could handle more customers, made a better impression because of greater personal efficiency, and best of all my sales went up."

Manipulation is included in knowledge of the goods. One should be able to fold and set up, adjust, drive or run, and otherwise take care of the functional aspects of goods of that nature. The value of manipulative skill is shown in this quotation.

"Yesterday I sold a folding army cot to a middle-aged man. Today he came back with it and said he wished to return the cot, as it was impossible to set up. He said he and his son had spent ten minutes on it and hadn't been able to put it in working order. Not liking to lose a sale like that, and perhaps more out of stubbornness than anything else, I offered to bet him the price of the cot that I could put it up all alone in less than one minute. He wouldn't quite take that bet, but he said if I could he would not only keep the cot, but would buy three more, enough for his whole family to use at their cottage. Well, I took my coat off and got another clerk to hold a watch—and set it up in thirty-five seconds. So I made the additional sales. To help them out, I set the cot up again slowly and showed them the proper way to do it. It's really easy when you get the hang of it."

Later in the sale one's detailed knowledge may be put to test when the customer asks questions and raises possible objections. One does not need to tell everything he knows about the product in the opening talk. It has been said that *a salesman can't know too much*, but he can *talk* too much. He should present only those of his wares and arguments which appear appropriate for the particular customer's needs, and should hold others in reserve to answer additional queries. It will create a good impression if he does have something in reserve. Many technical points will never need to be used at all; in fact, they will bore the average customer. They are ordinarily of no great value in promoting the sale, but are useful chiefly for convincing persons who are particular about special points. A motorist, for example, who may have had a good deal of trouble with his last car because the vacuum tank did not function properly, may be very cautious about this particular mechanical detail in subsequent purchases. But it would be inappro-

priate for a salesman to describe in detail the construction of the vacuum tank to all customers.

B. Confidence in and Enthusiasm for Goods

Unless a salesman has real confidence in his goods he cannot sell them successfully. If he is not genuinely convinced, his arguments, no matter how hard he may try, will fall flat. Try it out for yourself. Think of some commodity which you feel is mediocre or worthless, and see if you can present an enthusiastic argument for it. Even if the words may be all right, the tone of the voice is certain to be flat and expressionless. The functions of the salesman are to give information and to make the person who comes into the store with only mild interest so enthusiastic that he wants to own that item very badly. Unless the salesman can create desire through his own enthusiasm, the store might as well have articles displayed with printed cards giving specifications, and order-takers stationed here and there, like a cafeteria or self-service grocery.

It would be nearly impossible to obtain definite figures on the role of enthusiasm in creating sales. But we can give evidence to show that the particular articles sold depend on the attitude of clerks toward them. The following quotation shows not only the importance of confidence in the goods, but also answers the claims of some skeptics who have asserted that there is no such thing as true salesmanship in a store where customers come to the clerks.

"To keep check on our supply of tents so that we would never unexpectedly run out of any model, we checked on a card every time we sold one. Out of curiosity I studied the checks to see how many each of us had sold, and I noticed a very interesting difference.

"Mr. Perry and I together had sold about fifty each of a certain square and a round tent known as a palmetto design. The two models were nearly alike in all possible specifications: size, price, quality of cloth, floor-cloth, ease of setting up, etc. Yet Mr. Perry had sold about 35 of the round tents and only 15 of the others, while I had sold about 40 of the square ones and just 10 of the round tents.

"I asked him which of the two tents he would prefer to use if he were going on a camping trip. He said that he felt that the two tents were really about alike, and that the two, rationally considered, were probably a toss-up; but at the same time he somewhat preferred the round one. I

felt about the same way, but professed a leaning toward the square one. These preferences were in agreement with our proportional sales."

We might assume that as a group the customers coming to the two clerks were identical in ideas and interests, yet one can see the difference in sales due to no other factor than the clerk's predisposition. Another short quotation bears out the same point:

"We carry some rubberized air pillows, which should be very handy, since they fold up in the pocket, and fill with air in a few seconds to the size of a small pillow. Yet none of us have sold many, since they do not hold air well, are easily damaged, and prove defective in other ways. We actually discourage customers from buying them."

C. Work in Proportion to the Size of the Sale

This is the third major rule in selling. Cheap articles more or less sell themselves. One does not have to use much power of persuasion to work in a 5 and 10 or a grocery store. But one of the chief points of distinction between a good and a poor salesman is in the ability to sell high-priced goods, or, in the case of a wholesale salesman, to write orders for a large amount of the product. Two men may each make the same number of sales, but their day's totals may differ considerably. Let us take another quotation from the same camping-goods salesman.

"I learned another valuable lesson from Mr. Perry today. I had noticed that he was selling many more high-priced items than I was, but that I had sold as many army cots and steamer chairs as he. So I thought I was as good a salesman, but that he had been having the luck to hit on customers who placed larger orders.

"I commented, possibly a little bitterly, on his continual luck in landing higher-priced orders. He replied: 'I work for those sales. Did you notice those two women I was just waiting on?' 'Yes, you sure took a lot of time to get rid of them.' 'Maybe, but look at this,' he answered, flashing a sales check for over eighty dollars. I had waited on four customers in the meantime, but my sales had totaled less than twenty dollars.

"Then I realized that I had been expecting to sell fifty-dollar articles with the same amount of effort as was necessary to dispose of a Boy Scout cooking outfit. Since then I have been working harder to land big orders, and have made many more."

We can see how this is true if we reverse the picture and think of how each of us goes about purchasing something rather expensive. Before parting with a large sum of money we study and compare the product from all angles and then decide whether or not we can afford it. The salesman must remember this, and continue his efforts, even if he has to resort to casual conversation and to reiterating his major selling points.

VII. Handling Customers

Let us now consider, largely in chronological order, a number of major and minor points in carrying on the sale.

A. Greeting

The customer should be approached pleasantly as soon as he enters the department. A friendly "Good morning" will break the ice, show interest, and will not be too brusque. "Can I help you?" or "Might I show you this?" are good neutral questions to use next in starting the conversation. Such greetings are not so blunt as to scare off the person who has no immediate intention of buying. The customer will now state his desires or interest, which will enable the salesman to present the right goods with minimal loss of time.

Even if one is busy one should take care to greet new customers who enter the department by saying something like "Good morning; I will be with you in just a minute." This shows the customer that he is recognized and that his turn is established.

B. Sizing Up the Customer

The clerk should attempt to get a general line on the customer, so that he may display appropriate goods and use suitable arguments. One can try to judge from the clothes and general appearance of the person, and from his general manner of starting conversation, something about his personality. Your method of displaying the same item may vary widely according to whether you are dealing with a pleasant young man, a pompous elderly gentleman, or a timid lady. A jovial attitude will make things go along splendidly with some people, but others will think it too presump-

tive and want a business conversation to be precise and impersonal. The attitude with which people come into different departments is interesting. Customers come into the sporting-goods department showing pleasant dispositions. The goods which they want are for purposes of recreation and pleasure, and the attitude in buying corresponds. In contrast, people are more finicky when buying yard goods, sheets, shoes, suits, and dresses.

A few general questions will aid one in choosing the appropriate article to display. If a person inquires about a pair of shoes, one should immediately ask him whether they are to be used for business wear, formal occasions, or sports. Not until one has a fairly clear idea of the needs of the customer should one bring out merchandise. One should also try to estimate the quality and price of goods likely to be wanted. This is not an easy matter. People who have low incomes, as judged by their dress and residence, often surprise one by insisting on the best quality of goods. In case of doubt one should usually start out by displaying a grade of medium price. The customer can then go up or down, without having to make too great a change. If one brings out the highest-priced article, hoping to earn that much more commission, he may so embarrass a customer of limited means that the sale is lost entirely.

C. Presenting Arguments

Having diagnosed in general the wants of the customer, one should select from one to three possible solutions and point out their respective merits. Displaying more may create uncertainty and result in a delayed decision. A delayed sale is two thirds lost. If dealing with certain articles, such as neckties, socks, or yard goods, one must usually display a wider range, but even here it would be a mistake to bring out the whole stock at once.

Having selected a number of items to push, one should go at it enthusiastically and whole-heartedly. An old saying may be slightly altered into "Faint heart never won fair customer." The higher priced the goods the more energy is necessary.

D. Concentrate on One Item

It works out best to present in rather brief fashion the merits and specifications of the several possibilities one has selected, and

watch very carefully the reactions of the customer to each. His eye movements may indicate a slight leaning toward one article, even before he himself realizes that he is developing such a preference. The salesman may then drop for the moment consideration of the other alternatives and go into detail concerning the one which seems to be preferred. Now one may deliver the full broadside. But at the same time one should leave an opening for retreat. One may have been mistaken about the customer's initial preference, and find it necessary to concentrate on a second choice. If the salesman has committed himself too irretrievably on the first the customer may feel that the clerk lacks sincerity when he talks up the second.

E. Value of a "Line"

Many salesmen pride themselves on having a magnificent line. It has always been our personal opinion that a line did more harm than good. A standardized, rapid-fire, lengthy sales talk deprives the salesman of the advantages he has over the advertiser. It loses the personal touch, and is not adapted to the individual customer. It soon loses genuineness and enthusiasm and sounds flat. One might as well make up standard phonograph records describing each article as have salesmen with highly developed lines.

It is much better for one to study his stock and select the major appeals that may be used for each article, and to present these in an informal and conversational manner. The wording should be different for each customer, even though the general outline is the same, so that the talk will be genuinely sincere and spontaneous.

We are not discouraging fluent talking. It is valuable, but only when it is varied and appropriate. Keeping a conversation going, even if it is somewhat irrelevant, often bridges an embarrassing gap of silence while the customer is making up his mind. This is particularly true in selling higher-priced articles.

Partially irrelevant discussion, chosen judiciously, can often stimulate sales through creating more desires on the part of the customer. We give two quotations to illustrate this:

"Coming from near the White Mountains of New Hampshire myself, I found that I could supply personal aid to many customers in planning their trips for them. I knew what were the best sights, best roads, distances

between points, good camping spots, places for fishing, etc. Description of the glories of some of the scenes crystallized their desire to buy, so it was far from wasted time on my part.

"Quite a number came back to the store after returning from their trips to tell me about it, and to thank me for the advice I had given them. This of course brought them into the store a second time, so must have established plenty of good-will."

"This afternoon business was pretty slack, so I welcomed the chance to talk a little longer with a very pleasant and interesting man who had purchased a palmetto tent for around $50. I told him all about the scenic possibilities of New England, and we had quite a fine time talking for about three-quarters of an hour, while sitting under the awning of a palmetto tent, just as if we were African explorers watching the sunset.

"When he finally left, Mac, our assistant floor superintendent, came over and chided me for wasting so much time with one customer, and asked sarcastically why we hadn't ordered tea served. I showed him the order I had taken, which in the course of our conversation had grown from the original single purchase to include two cots, two mattresses, a gasoline stove, and a few other items—totaling slightly over a hundred dollars. Mac turned on his heel without saying a word, and walked away."

F. Meeting Objections

Meeting objections demands very careful handling, as there is opportunity to stir up ill will in a number of ways. Up to this point the salesman has had his own way, selecting the goods he thinks are suitable for the customer and stating his positive arguments. Now he may hear certain questions or objections, and he should be prepared to answer them with fact and conviction. It is well to be prepared to answer objections, by anticipation and preparation, just as a debater tries to tear down his adversary's case before the latter gets a chance to state it. Objections of the customer cannot be brushed aside with an air of finality or dismissed as unimportant. This would antagonize, by implying that the customer was stupid. If one can quote figures, guarantees, and proofs of quality, or be able to state that the feature desired can be obtained for so much additional, he will allay the doubts of the listener and at the same time demonstrate his knowledge of the business.

The salesman, however, should use only positive arguments for his own product. Mention of rivals' products might suggest to the

customer that he look them over. Nevertheless, the heading of knowledge of goods must include a fair knowledge of competitors' lines. Only by such knowledge can one answer authoritatively certain objections customers may raise. The following quotation bears on this:

"We had heard from a number of people that ——'s was selling an identical army cot for fifty cents less than we. I couldn't believe it, but after hearing it a number of times I resolved to find out for myself, so at noon today I ate lunch hurriedly, put on my hat, and went over to their store. I found that the cot mentioned was of the same construction and made by the same firm, but was somewhat less sturdy and 24 inches wide instead of 26. We carry the narrower width in stock for 45 cents less than ——'s, but didn't have one on display. The difference in width may sound minor, but you take two inches off the width of a cot already pretty narrow, and it really amounts to something."

One should refrain from knocking competitors' goods. Products should be sold on their own merits, not through running down others or claiming them to be worthless. We realize rationally that there are, as a rule, only slight differences in quality between goods of the same general price class, say automobiles selling within a hundred dollars of each other. A man buys the car he does because it seems somewhat better fitted to his needs or because he thinks that there is *slightly* more value for the money. Differences suggested by advertisers and salesmen are usually found to be pretty minor. So it is better for the salesman, when told frankly that the customer is wavering between his make and another, to admit that the rival produces a fine car, but that he thinks he can demonstrate how his is superior. Proving this by facts, figures, and demonstrations is not knocking in any sense. When Plymouth advises one to "Try all three" (cars in that price range) they are inviting competition, and have confidence that one will purchase their make after giving all three equal consideration.

Let us mention several of the suggested methods of handling objections. We may take as an initial premise that the only insurmountable objections are lack of money and no need. In quotation form here are six definite suggestions given by Strong (*10*):

1. "I'm coming to that" stalls off an objection difficult to answer, and gives one an opportunity to build up his favorable points first.

2. *Direct denial—show tactfully that the prospect's objection is based* on erroneous information or reasoning.

3. "Yes, but. . . ." Example: "An oil heater may be slightly more expensive than a coal furnace, BUT think of the following savings."

4. "That's the very reason why." "For a man in your position *not* having a new suit would be false economy."

5. "Why not?" Throw the objection right back; often the prospect will *realize that his objection is trivial.*

6. "Let's analyze the situation." "This new and larger truck will do much more work, and will be more dependable."

G. Handling Disputes

Occasionally on the sales floor, as in all social situations, people may disagree and become emotional. Real tact is called for here, to save the situation and not to send away a disgruntled customer who may never return. The best thing for the clerk to do is to quit arguing himself. Most people want to get in the last word, and at this rate a dispute would never stop until one person gives in or leaves. If one admits he is wrong, whether he really is or not, he will take the wind completely out of the other person's sails. The salesman should be the one to do the conciliating, since he is in the less favorable position. He must make a good impression on the customer, while the customer has no reverse obligation. This is the *reason most stores tell their clerks to observe the instruction:* "The customer is always right." There is nothing to be lost and everything to be gained if the salesman apologizes and suggests that they resume business amicably.

Sometimes another salesman can step in and take the place of the first, and finish up the transaction satisfactorily. The following quotation shows how this may work:

"Danny got into a heated argument with a woman today, and I stepped in before it got worse and asked him to let me take care of her. She was in pretty much of a huff, but I was unusually courteous, and calmed her down in a minute. I happened to think that Danny's wife was expecting a baby any minute, and told the lady that he had been pretty nervous on this account, and to excuse him. She was very nice about it, placed her order, and left completely satisfied.

"This worked so well that I made the same excuse several times later, even with a couple of the boys who were not married. My conscience

didn't bother me much for this little white lie, as it did no harm and fixed things up satisfactorily all around."

VIII. Closing the Sale

In the course of most sales there comes a time when the arguments have been stated, discussion completed, questions and objections answered, and all that remains is for the decision to be made. The customer is on the fence and it is the problem of the salesman to pull him over to his own side.

It is often the practice to speak and write of "closing the sale" as if it were something separated and mysterious. However, authorities like Strong and Ivey scout this idea. They point out that the whole of the sale is designed for the purpose of closing it favorably, so that it is impossible to isolate one part of it and designate it by a special name. It is ridiculous to suggest that a man may have fine powers of salesmanship up to a certain stage, then suddenly lose them, and reacquire them when the next sale starts. These arguments are logical enough.

With articles of low price particularly, one may not need to use his whole sales talk to convince a customer. He should be alert for a chance to finish the sale quickly. On the other hand, the customer may still remain unconvinced after the main arguments have been covered, and they may need to be repeated in different form. With high-priced articles there may be need of definite closing tactics. There is a natural hesitation in buying a new automobile or a heavy insurance policy, even after all the arguments have been marshaled and although one realizes the value of the purchase.

The ideal procedure is to incorporate the closing into the whole sales talk. One should concentrate on a single item to prevent vacillation, bring out the arguments in a well-ordered series, and finish in a strong climax. Thus one (theoretically) works the customer up to the peak of enthusiasm, and finishes the sale without danger of his cooling off while weak and minor points are appended.

If a person does not buy it is clear that he has one or more negative incentives which inhibit him from action. He has already shown that he has one or more positive incentives by the fact that he voluntarily came into the store to inquire about and to look at the article. It is up to the salesman to discover what the negative

incentives are and to remove them. If they relate to the quality of the goods the problem can be approached directly. If cost is the deterrent factor, the task is more difficult, as one cannot put non-existent money into the pockets of the prospect. One may show the customer that purchase will result in ultimate economy. With a new automobile, for example, "Yes, Mr. Simmons, a new car does represent a heavy investment for any of us. But you will have this car for a number of years. You admit that your present car is giving you some worry all the time for fear it will break down, and that your repair bill is constantly increasing. The new model is faster and easier to drive, has all the improvements we have been discussing, and will be more economical than the one you are limping along with now."

Link (6) has presented several new tactics for selling. Two fundamental points are stressed: (1) Instead of trying to beat down sales resistance, *avoid* it. This is achieved in part by following his second recommendation, which chronologically really comes first. (2) Design the goods to satisfy existing demand. Too often, he points out, the manufacturer has made some goods, and then expects sales and advertising departments to sell them. As he says, "A cigarette stand or humidor, sold for its convenience, may turn out a failure because, in actual use, people find it does not fit in with their smoking habits." To avoid sales resistance, one first studies the buying habits and desires of the potential customer, and then plans his product, his advertising, and his sales arguments in terms of human behavior as it actually is, not as he conceives or hopes it to be. Then a direct and logical selling appeal can be used; it will not be necessary to stimulate desire artificially.

In removing objections one must be careful not to insult the intelligence of the prospect. The salesman may admit the validity of the objection in general, thus flattering the customer's judgment, and then may proceed to show how it does not apply in the present instance.

Getting the prospect to agree with each point as it is stated makes an ultimate refusal that much more difficult. This procedure has the very important advantage of forcing the buyer to make up his own mind, which is an active rather than a passive process. The customer is really selling the thing to himself.

Some salesmen have reported success by allowing the prospect to build up his whole defense on one objection. They deliberately allow him to work to the end of the rope, get him to admit that that is the point which deters him from buying, and then suddenly bring out arguments which demolish the whole structure. With the letdown following this the decision often results immediately.

A gentle push may make up the customer's mind for him. All arguments have been stated and analyzed, no further discussion is necessary, and inertia is all that is standing in the way of the sale. The customer may be like a person standing beside cold water, ready to dive in. He is ready, he knows that he will go in eventually, but he hesitates. One may show that he assumes the customer has made up his mind, offering a remark like, "I am sure you will get lots of enjoyment from this," "I will see that this is wrapped and delivered right away," or "Your address is ——?" while opening the sales book and holding the pencil poised. The person is placed on the defensive, in rather an awkward position, and may be bluffed into acceding. Care should be taken to apply this method only when conditions and the prospect's personality are favorable, or the sale may be spoiled.

A representative of a building firm reported landing a large construction contract after several months of negotiations, when he said, after being asked to wait three weeks for the decision: "Mr. Blank, we have spent a great deal of time on this proposition. Our estimating department has gone into it very thoroughly, and as you know, I have done little else for the past three months but carry on negotiations with your organization and lend my technical knowledge to the working out of the problem to the best advantage of your people. Now if it is going to be another three weeks before you can even give it attention, I shall have to withdraw the proposition and devote my time and thought to something else. I am sorry." The proposition was immediately accepted. We should not recommend general use of such a drastic and spectacular method. One must know that a proposition is fair and desirable, that it is on the verge of being accepted anyway, and that the buyer will not get angry at such tactics.

Time and persistence may be the factors that cause the negative incentives to vanish. All the arguments and facts may be brought

out in the first interview, but after a few more calls, perhaps conducted in a perfectly casual and friendly way, the prospect will suddenly announce that he is ready to go through with the deal. This is especially true in large-sized sales. The salesman must be careful, in cases where he hopes to land the order eventually, not to betray disappointment or resentment at not completing the deal on the first call.

IX. Building Up Good Will

1. TREATMENT OF "SIGHT-SEERS." Salesmen in large stores use this idiom to refer to the person who browses around with no intention of purchase and even without any particular interest in any single article. A city store is really an excellent show place, and people may fill in spare time wandering around, or may even entertain friends from out of town by showing them the larger stores along with other sights of the city.

When the salesman greets the visitor and finds that he has no special mission, his attitude should not change. Unless he is very busy he might as well give some time to such a person. Sales often follow such courteous treatment, now or later. Good will is established for the store in general, even if that salesman gets no additional commission for his thoughtfulness. The effectiveness of a salesman is not entirely measured by the size of his book. The visitor may be a bona-fide customer in another department in the store, and may be just looking elsewhere on the way in or out. Also she (it usually is a she) may be a steady customer of the store, but *may be merely browsing around today. Finally the individual may* have some intention of later purchase, but may be so vague about it that he prefers to look around unostentatiously now, without even admitting serious interest. If one gives such a person attention and information with as genuine enthusiasm as if he were making an actual sale, the visitor may even buy now; or if he buys later he will not only return to the store, but will usually look up the same salesman.

2. SPECIAL ORDERS. It is somewhat of a nuisance for the salesman to handle orders for merchandise not in stock and to take care of other irregular transactions, such as delayed delivery, parcel post on out-of-state and out-of-city packages, request for immediate de-

livery, etc. The management usually tells the clerk to cater to every whim of his customers. Actually this takes a disproportionate amount of time, and unless the order is rather large usually results in a net loss to the store. The clerk may ascertain whether the request is a deep-seated desire or only a momentary whim. If the latter, he can persuade the customer to take the goods as they are in the usual manner. If he is insistent, one accedes, of course, and charges the effort to good will. A favor may pay extra dividends later.

3. DUTIES TO THE CUSTOMER. Salesmanship is often represented as a battle between the clerk and the customer. This view is not held by the better type of organization. The latter emphasizes service, honesty, reliability, guarantees, courteous treatment, and good will. The store stands back of its merchandise, whether the manufacturer does or not, and cheerfully replaces anything that proves defective. It has learned through experience that losses sustained in this way are more than made up in the steady patronage from satisfied customers. Similarly, it realizes that forcing unwanted goods by high-pressure selling is a short-sighted policy which results chiefly in returned goods and ill will.

The same principles hold true for the individual salesman as well as for the organization. Considerate treatment and special effort will result in customers looking for a particular salesman when they return for subsequent purchases. Building up a steady clientele is especially important for wholesale salesmen and for proprietors of neighborhood stores.

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CHAPTER XXVI

SELLING OUTSIDE THE STORE; STORE MANAGEMENT

In the last chapter we analyzed problems and practices of retail selling. Different problems arise when one is handling insurance or other intangibles, is selling at wholesale, or is attempting to do business at the office or home of the prospect. We shall also discuss certain psychological problems which pertain to location, design and management of the store.

I. Sales Tactics

A. Selling Through Interview

1. PROBLEMS. A high degree of selling technique is necessary when initiation of the transaction comes entirely through the salesman. This applies particularly to insurance, investments, other types of protection and service, and articles sold in the home or office of the buyer. By comparison the salesman in the retail store has much simpler problems. The customer comes to him with interest already aroused and usually partially or even completely formed intention to buy. The goods are generally of low price and of a concrete nature. Think how much harder is the task of the insurance salesman who calls at the office of a busy man and tries to interest him in something about which he has thought little, which may demand a rather heavy investment over a long period of time, and from which he may not derive any immediate return.

2. FINDING THE PROSPECTS. Whereas in the retail store one waits on everyone who appears, in interviewing one must select his pros-

pects to visit. Not everyone is available for attack. He may be already filled up with the type of thing you wish to sell. He may be a steady customer of some other company. He may have no need or wish for it at all. Finally, he may be too poor to buy, regardless of desire.

A careful selection of prospects will bring a higher than chance percentage of returns and will save a great deal of time. Salesmen often make a point of trying a few of the most prominent individuals in the city first, attempting to interest and to sell to them, and then using their names as references to subsequent prospects. The first people interviewed may be asked to suggest other likely prospects. Saying that "Mr. Williamson suggested that you would be interested to hear our proposition" adds a personal touch and makes it difficult to refuse at least a fair hearing. This assists in driving the opening wedge.

3. ANALYSIS OF PROSPECTS. To make a sizable sale one must make thorough preparations. One should ascertain the prospect's business, daily routine, personality, age, chief interests, hobbies, and spare-time activities. In dealing with insurance the most important facts center around family and business. Years ago straight life was almost automatic; now many forms are recognized, each adapted to certain groups of people. One would not suggest a straight life policy to a middle-aged bachelor. He will be more interested to invest in an endowment or retirement policy. A married man with no children will desire a trust fund for his old age or for his wife in case of his early demise. A younger man with growing children is good game for an educational policy. If an automobile salesman wishes to demonstrate a new model, he should find out the number, ages, and status of the members of the family so that he may bring a car with the proper body design.

The alert salesman will watch the papers for news notes which may prove important in adapting the sales talk to the probable needs of the prospect. Items such as births, deaths, marriages, children going to college, vacations, business openings, car sales (for insuring or servicing that car, as an example), new houses (for insurance, furniture, landscaping, etc.), new arrivals in the city (for milk, groceries, tailor shops), can be filed on small cards, and used promptly and appropriately. Later use of the file system will lend

a personal and flattering touch: "Tomorrow is your wife's birthday; can we help you select a suitable gift?" "Your son is now eight years old; isn't he large enough to ride a bicycle?"

Naturally the more such information thus collected and utilized, the more appropriately can one plan his campaign. Such information is valuable in choosing the item to push and in *planning the interview.* It has been suggested that it is a great help in starting the sale to make the prospect say "Yes" two or three times right at the beginning of the conversation. In selling an educational-insurance policy the conversation may be planned somewhat as follows: "Mr. Robinson, you have a young son, haven't you?" "Yes, he's seven now. Fine boy." Obviously a point of great interest has been touched. "You want him to go to college, don't you?" "Of course, he's going to State, where I went." "Will he be in a position to go if you should happen to drop off, become disabled, or if your business should fail?" The ground is now prepared for introduction of the detailed arguments and facts.

Ambitious and painstaking salesmen have been known to spend hours studying a prospect's hobby. For example, I find that Mr. Smith is an ardent golf, or fishing, or postage-stamp enthusiast; I myself know next to nothing about his particular hobby, but I am told that he will talk freely if one brings up his favorite avocation. Accordingly, if the sale promises to be sizable, I can afford to spend several hours in the library gaining at least a superficial knowledge of Mr. Smith's recreational activity, hoping to win a sympathetic interview.

4. SECURING THE INTERVIEW. This sounds like a purely routine and perfunctory matter, but it is not so easy as it sounds. It is very different from calling up a dentist, barber, or tailor, from whom one intends to *purchase* something. Everyone is more willing to sell than to buy, and busy men usually have a definite resentment against salesmen.

On this point Strong (3) says, "The secret of success in securing an interview is to behave like a man whom the prospect would not want to exclude." Act confident; the man who half expects to be refused will let himself into his own trap. There are a number of ways in which an interview may be secured. A telephone call is a dignified and timesaving method of making an appointment. If

one simply appears without previous arrangement, it may not only waste time in waiting, but it will also appear that one is not very systematic, and does not think much of the value of his own time.

Combining the request with a personal introduction is helpful. One may say, "Mr. Franklin just suggested that I tell you of the service we can render you. May I see you for a few minutes this afternoon?" Phrasing the call, "May I see you at ten this morning, or would two this afternoon be better?" contains a powerful positive suggestion, as it assumes that the interview will be granted and that the only question is the exact time.

5. STARTING THE INTERVIEW. Starting the interview is comparable to securing attention and arousing interest by an advertisement. It is much more critical in interview selling than in retail-store work. A few words of greeting and a strong opening sentence are necessary. One must carefully balance one's manner between effusiveness and too meek an attitude. A handshake will start things off in a friendly manner, but the salesman should not force matters if the prospect seems rather reserved.

It is commonly suggested that the salesman will do well to discover a man's major interests and hobbies—family, radio, golf, fishing, travel, etc.—and to hit one of those at the outset. This advice is not all it sounds, as interests are not always easy to detect, since they cannot often be tied up with the product in a direct manner, and since the customer may not respond favorably. A busy man may keep his golf out of the office, and will be antagonized by its being brought up. However, the suggestion is applicable if one interprets it more broadly and takes it as a hint to study the characteristics and needs of the prospect. Selling trust or educational-insurance policies to married men with families is an example of this.

During the first few minutes one will be attempting to size up the prospect, to gain information additional to that which he has previously secured. Behavior displayed at the beginning of the interview may furnish aid in deciding what approach to take. However, the salesman should take particular warning not to overdo these attempts. The prospect's initial reaction may not be characteristic of his true personality, he may be busier or more at leisure than usual, he may not be feeling well, things may have been go-

ing badly. Then too, as we have seen before, many personality traits cannot be estimated without a test or a long acquaintance. Finally, such rapid modes of diagnosis usually involve interpretation from complexion or facial characteristics. We cannot emphasize too strongly that such estimates are fallacious; in fact, worse than useless.

Thousands of dollars are literally stolen every year from sales organizations by so-called experts, who often style themselves as psychologists, who sell charts or lessons or lectures to the sales force, and tell the salesmen what approaches are suitables for blonds or brunettes or redheads, or men with prominent jaws or receding foreheads, or whose eyes are deep set or wide apart. Even writers of otherwise sound textbooks on salesmanship have been known to succumb to this pitfall, which has been conclusively disproved by several careful experiments. If your organization has money to give away, contribute it to a worthy charity, but don't encourage and perpetuate such frauds.

Two examples of using personally appropriate appeals are drawn from experiences in selling oil burners. The salesman stumbled on the fact that the owner of one house was interested in photography, but had a difficult time in carrying on his work because of lack of adequate permanently available space. He made the sale through using the appeal of being able to form a new room in the basement where the coal bin had been located, and keeping it clean and suitable in every way. He discovered that *another man's wife had a minor heart weakness, and an oil burner* was sold on the basis of protecting her from possible serious injury in climbing stairs from the cellar.

6. PRESENTING ARGUMENTS. The same general principles which are followed in retail salesmanship hold here. In selling a service like insurance the case must be made especially strong. The policy cannot be used directly as can shoes or an automobile; it burdens one with payments for many years; it cannot be shown off to the neighbors; and it is not an immediate necessity.

Strong suggests three general steps in selling: (1) Make the prospect realize his wants; (2) show him that these wants, present or future, are not being satisfied at the present time; and (3) plan the best solution for attaining these desires.

The first step is the most important and the most difficult. A man will not buy anything he does not want, so he must be made to want it. Dramatic negative appeals can be used in connection with selling insurance. In urging personal-liability automobile-driver protection one can argue as follows: "Mr. Johnson, you simply cannot afford to take the chance of being unprotected. Do you realize that according to the laws of this state, in case of judgment against you for injuring someone while you are driving, the court can attach the greater portion of your wages for the next twenty years?" If one can find a somewhat parallel case known personally to the client, the arguments are that much more impressive.

Another strong argument for insurance is the feature of regular investment. Less straight life is being sold at the present time, and more attention is being devoted to various forms of endowment policies. An objection may be brought up that the rate of return is lower than that from many other business investments. A stronger positive appeal must be used to counteract this, somewhat as follows: "We grant that insurance pays a rate below some stocks, but just how many of these do you own? If you decide to invest in stocks, when do you do it? 'When business picks up a little; when I have saved up some money,' you will say. But do you actually do it regularly? With insurance you will pay regular amounts on stated dates, and will budget yourself to include these, just like your rent and your taxes."

Once interest and a degree of conviction have been aroused, the remainder of the discussion will proceed more easily and logically. *The prospect is now ready to listen to the proposition and will pay* attention to the development of detailed arguments and facts. A man who is able to make a sizable investment is usually one who can understand figures, so arguments can be placed on a rational level once interest has been obtained.

It is a good plan to present figures in growing fashion; that is, to show calculations in process of being made rather than finished. This will enable the customer to understand them more easily, will focus his attention just as you wish to direct it, and will present a logical development; and the conversation will be more informal and personal than if one appears with a printed or typed outline

One may consult tables, but the development should come from pencil-and-paper computations on a separate sheet of paper. Such a procedure is entirely unique and personal, and one can vary his figures and the propositions as the conversation develops.

7. MEETING OBJECTIONS. These are encountered and handled just as in retail selling, except that they may be advanced even before one gets a chance to state his proposition. Such objections are not often raised in store selling, as the retail customer has some interest in the goods and usually knows in general the cost and major specifications.

One should be alert to change arguments quickly and discuss different products, if the prospect appears interested in general, but does not seem to respond favorably to the particular proposition suggested. Various types and prices of insurance policies or of automobiles are examples of this.

Mention of the price is often delicate. If it happens to be rather high, it is recommended that one take pains to point out all the advantages and features of superior quality before price is mentioned. Then the prospect will be in a position to understand why the total cost is high, or why that particular article costs more than others of generally similar nature. The price can be made to seem much lower if quoted by the unit or by the month. For example, instead of quoting the annual insurance premium as $240, one may say that $20 a month will take care of the payments. This is carried still farther by high-pressure salesmen, who speak of the few cents a day which will secure all the advantages of their goods. A few cents a day sound like nothing; most people spend more than that for papers, tobacco, and soft drinks. Yet ten cents a day means over $30 a year; three cents daily commits one to approximately $10.

B. Wholesale Selling

In the main the problems encountered in this type of selling are similar to those in dealing with retail and intangible commodities. We shall confine ourselves to discussing a few of the outstanding differences.

An interesting fact is that the retail owner or buyer, who usually sells goods to private individuals, now is a customer himself. This

has advantages to both parties. Both understand that efforts are being made to put through a sale, and both have a desire to effect some transaction. The merchant must have desirable goods to sell, although he must be careful not to overbuy or to buy inappropriately.

Selling should be able to proceed on a more technical level than in other types of selling. Both parties are familiar with salesmanship, so the problems of arousing interest and enthusiasm toward the article can generally be ignored. The buyer is usually willing to listen to the wholesale salesman's proposition, since he is always eager to find high-quality goods which will have a rapid turnover.

The chief problems of the wholesale salesman are to make the prospect: (1) buy from him, (2) buy his goods exclusively, and (3) buy now. The first and second are very closely related.

Practically the entire success of the wholesale salesman is founded on good will. Hence friendship between the buyer and the salesman is very important. A call on the part of an out-of-town person is enjoyable, and if he is someone who comes around frequently there is much in common to talk about. It is good business for the salesman to encourage such friendly contacts. Wholesale salesmen who make the circuit of their territory every few weeks often become unusually successful through personality and sociability. They gain a virtual monopoly for themselves. At the same time they must be careful not to unload unwanted goods in this manner, or they will rebound. When the place of meeting is reversed and the buyer goes to the wholesaler in the city, dinners and entertainments are often in order. Many a business deal is settled at a lunch or dinner table, and the foundations for many more are laid in this manner.

At the same time the goods must make a good line to carry. They must sell well and prove to be of good quality. If a man sells paint, shoes, clothing, tires, groceries through friendship or other emotional appeal, and the goods do not sell well or do not provide customer satisfaction, further orders will not be obtained. Business of a representative of a factory or wholesale distributing house must be based not on single orders, but on repeat orders.

An important but difficult task for the salesman is to break down a strong predisposition to buy from one single representative ex-

clusively. The following incident illustrates an interesting way in which it was accomplished in one case. This salesman found out why he had been rebuffed and why his proposition had not even been given decent attention. The merchant would buy from none but fellow lodge members. The wholesale representative came in one day, bringing a card, and said: "I don't want to sell you anything today; I only want to give you this card, which should help you in your business." And he produced the card which read, "I do Business Only with the Members of the Grand Brotherhood of American Freemen." "What's the big idea?" came back indignantly. "I really got the idea from one of your brothers in the order. He sells you goods and told me one day that you prefer to buy from fellow lodge members. He thinks you let this get in your way. The humorous idea struck me that if you want to *buy* only from members of your fraternal order you should go one step farther and *sell* only to customers who are of that order. You see you really aren't fair to members of other orders. For instance, if a dealer who is a Mason *buys* only from salesmen who are Masons, but *sells* to Elks and Odd Fellows as well as Masons, he's cheating the Elks and Odd Fellows." This rather drastic tirade earned him an audience. Getting a fair hearing gives one a good chance of making a sale.

Presentation of the proposition, meeting objections, closing the sale, and other minor steps will differ little from those previously discussed in connection with other types of selling.

C. Door-to-Door Selling

This type of retail selling has many of its problems in common with other kinds of selling. As in advertising, one has to attract attention and arouse interest. As in retail selling, one is selling to the ultimate consumer in a personal manner. As in wholesale selling, one calls on the buyer rather than having him come to the salesman.

It is unfortunate that many individuals who engage in this form of selling are unscrupulous about their methods of doing business, gain orders by taking the prospect off his guard, and are even dishonest at times. From an ethical standpoint we cannot condemn such behavior too strongly. But since there are legitimate and desirable business enterprises which make use of this type of selling,

and since it makes a good deal of use of practical psychology, we shall devote a little space to discussing it.

Articles sold in this manner are generally of comparatively low price and mass use. Hence practically every household can be taken as prey. The greatest problem of the door-to-door salesman is to gain the interest of the prospect. Curiosity may be aroused by making some startling statement or offer. One writer suggests that one should first "unsell" the customer; that is, make him dissatisfied with his present conditions. Then the solution to that dissatisfaction can be presented. Curiosity may be aroused by a trick statement such as "I am here to save you five dollars," which, upon inquiry, is discovered to mean that something will be sold for five dollars less than it can be purchased elsewhere. A rapid demonstration to arouse interest was arranged by a cleaning-liquid salesman. When the housewife came to the door he asked to be handed any aluminum pot or pan which might be handy. He quickly wiped off its surface with a rag soaked in the polish which he had ready in his hand, and thus demonstrated an instantaneous cleaning effect.

Some salesmen have the trick of casually placing one foot inside the door. They realize that there is a certain resistance against itinerant workers and that there is danger of the door being slammed in their faces. If the foot is in the way the door cannot be shut, and they will be granted at least a chance to tell what they have. This is an important opening wedge.

Owing to the unscrupulousness surrounding much of this type of selling we will close this short discussion with a few points of special warning to the customer. To start with, do not fall for a high-sounding proposition. It is worded to sound remarkably advantageous and cheap. Analyze it thoroughly to see just what the total value and total cost will be. Some propositions may be genuinely cheap, but may let one in for a number of years. Even if they are desirable at the time, one's status may change later in such a way that there is no further use for them. Magazine subscriptions come under this class. Be careful against signing anything without a thorough reading. The high-pressure salesman may emphasize the easy features and pass rapidly over others or omit them entirely. One should consider the company producing the goods,

to make sure that it is reputable and well known. Encyclopaedias and maps are often sold, and on arrival are found to be poorly designed, incomplete, and even definitely out of date. Finally, one should refuse to hand over cash in case the goods are to be delivered later. Inferior goods may be sent, or the salesman may abscond without sending in the order at all. A fractional down payment may trap the unwary and distract one from the thought of a possible attempt to defraud, but a dishonest person can work one community in this way for many hundred dollars.

D. Selling Quality Merchandise

Being able to sell "quality," or in other words, goods which are high priced in themselves or are of higher price than the majority of parallel competing products, has been mentioned as one of the chief differences between the good and the mediocre salesman. It takes little salesmanship to sell in a ten-cent store or a cut-rate drug store. And it is much easier to sell in a chain grocery or hardware store than to deal in higher-priced merchandise, or to persuade a customer to buy a pair of shoes for six dollars than to convince him to part with fifteen dollars.

One writer has estimated that in quality merchandise it is four tenths the goods and six tenths salesmanship, in comparison with an estimate by many experienced salesmen that at least three fourths of the nation's retail purchases are actually made by the customer himself rather than due to the efforts of a salesman.

In any sale both reason and emotions (desire) count, but with more expensive items the role of emotions bulks larger and larger. On a purely utilitarian basis one could not say that a Cadillac is worth twice as much as a Chevrolet, or that a $75 suit will wear twice as long as one for half that price. A pair of delicate slippers is obviously much less serviceable than boots designed for farmyard use! All of which makes clear the role played by salesmanship.

In many cases the customer needs to be educated to appreciate quality. (By the way, the word quality should not enter into the sales talk more than sparingly; convey the idea more subtly.) In selling antiques or Oriental rugs to an untrained person we have an excellent example. Before he can be made to want such items, he must be shown their fine points, the workmanship involved, the

atmosphere such things will give his home; and often of great difficulty to convince, that its age actually enhances the value rather than placing it in the second-hand class. A higher-priced pair of shoes may be demonstrated by having cross sections cut out to show the various hidden features of superior construction and workmanship. An expensive and a cheap shirt can each be washed a dozen times, and the wearing qualities thus shown.

Finally, a "quality" atmosphere should be created. A jeweler will have a tastefully appointed shop, subdued lighting, and will display the jewels on a black-velvet background with no nearby objects competing for attention. He will handle pearls almost reverently, not like a grocer scooping out so many moth balls. Finally, his clothing and speech must be up to the goods, and if he is to call on a customer, his car and his brief case must not fall behind the rest.

II. Store Management

A. Attracting Customers to the Store

Unless customers come to the store, it is in the same position as an advertisement which fails to attract attention. Business will suffer, no matter how well equipped the store is and how good its selling policies may be.

1. Location. Location is by far the most important single factor. There are a number of recommendations which have been suggested as a result of customer analyses. Before one establishes a store the location must be studied with respect to possible customers. Passive factors are presence and absence of competitors, size of town, and part of the city. Active factors are the number and kind of people who pass by. The number of pedestrians and vehicular passengers is the first but not the only point. The classes of individuals and the hours at which they pass by are also important considerations. Stores have attracted very little trade in extremely busy districts because it had not been noticed that the passers-by were chiefly workers in large nearby plants rather than shoppers. Sex, occupations, and financial status are other points.

What seems rather surprising at first is the fact that stores prosper better when near others than in comparative isolation. Women do the greatest share of the buying, and they like to "shop." In

contrast, men usually buy rather rapidly in the most accessible store. It has been found that women neglect an isolated store, preferring to look around in several of similar nature within a limited district when they wish to buy something. Hence we see most department stores, furniture stores, and clothing shops grouped in certain parts of the business district. There is competition between them, but they also reinforce one another's sales. Two which are close together will attract more than twice the number of customers that each would attract if widely separated.

Neighborhood stores—drug, grocery, tobacco—are exceptions to this principle. Goods bought in these places are standard, of fairly uniform price, and are purchased without too much deliberation.

The type of neighborhood is the next consideration. These gradually change in most of the larger cities. New York has seen several such shifts within the last half century, the center of the shopping district moving gradually northward. If a store is located in a decadent district, customers will fall off and a change will become necessary. This involves expense, loss of time, possible damage to merchandise, and a necessity of getting customers acquainted with the new location.

Corners and proximity to bus stops, junctions, and waiting places are especially valuable for newspaper and magazine, tobacco, and ten-cent stores. These places are patronized by all classes of people, and such little time is consumed in purchase that there is no fear of missing a bus. The few minutes of waiting can be occupied with routine purchases such as these.

Finally, the side of the street may make a difference. The majority of shoppers are in circulation during the warmest hours of the day, so the shady side is generally advisable. The sunny side may be desirable during the winter or to set off certain types of window display, but it may prove too warm at other times, and may cause displayed goods to fade. The fact that rents are usually higher on the shady side is direct proof of its greater desirability.

2. STORE FRONT. To a store the front is like a person's face. Identification is assisted by overhead signs, brass plates, name on windows, and characteristic architectural features. Each window should have a sign on the glass or on the price cards placed with the merchandise on display. A few days ago the writer walked by six win-

dows of the leading department store of a city of several hundred thousand without being able to find a single mark of identification. A potential customer might easily pass by and go into some other store.

Familiar to everyone are the characteristic fronts of several well-known chain grocery, drug, tobacco, and ten-cent stores. By means of the color or design one can stand on a corner and spot the desired store within at least a block on either side of the street in all four directions.

3. WINDOW DISPLAYS. Window displays form a link between the outside and the inside of the store. They attract the attention and arouse the interest of the potential customer. They also act as advertisements for the store in evening hours.

The articles displayed in the window should be representative of a variety of products sold in the store. A grocery store, for example, may display canned goods in one window and fresh fruits and vegetables in the other. Goods so displayed should be timely, things one wishes to push, such as new clothing styles, sporting goods of the season, sale goods, etc. Space should not be taken up in showing goods which are sold regularly or which bring in small profit.

In arranging the display there are a number of artistic principles to be considered. Balance, dignity, and relative isolation are other important technical points. Class is suggested if fewer articles are in the window. By contrast we think of cut-rate stores, where window dressing seems to come more under the head of acrobatic feats than of artistic endeavor. The background can add to the quality of the display and isolate the window from the store. It is usually recommended that the view from the window into the store be closed off, since extreme depth would distract from the display and tend to create peculiar depth illusions. Auto showrooms and barber shops are among the exceptions, since it is desirable for potential customers to look in.

Displays should be changed frequently. Keeping the same display week after week will fail to arouse and sustain interest.

4. DOORWAY. Location of the doorway is a rather minor point, but one which may make a difference in the number of people who enter the store. There are several possible variations away from

the usual simple door arrangement, which is little more than a cut in the wall. A doorway set diagonally on a corner makes easy access from both streets. An inset door enables window-shoppers to avoid being jostled by passing traffic and allows more frontage of window space for display purposes. It also gives shelter in case of rain. Some of those who stop for any of these reasons will come into the store.

5. PARKING LOTS. Parking lots are maintained by some stores to attract customers. In large cities parking is a serious problem, and must often be solved by paying to park in a lot. If the store maintains a free lot or cancels the charge on display of a receipt for a dollar (or so) many customers will come there rather than go to another store of otherwise equal desirability. Minor necessities, such as toothpaste or cigars, may be bought to avoid paying the charge.

B. Layout of the Store

1. GENERAL PROBLEMS. Sales may be increased by bringing the customer into contact with as many items as possible. Thus he is tempted to buy goods in addition to those for which he came into the store. Things should be arranged as conveniently as possible for both the customer and the clerk.

2. DEMAND AND IMPULSE GOODS. Authorities on store management make this important dichotomy: *Demand* goods are those which are bought regularly and more or less by necessity, such as bread, butter, eggs, flour, shirts, toothpaste, soap, and cigarettes. *Impulse* goods are those which are bought irregularly and are of luxury nature; they include candy, flowers, seasonings, unusual foods, neckties, ornaments, and novelties of various sorts.

The customer will buy demand goods regardless of the location, but will not usually ask for those of the impulse type unless he sees them and gets a sudden desire for something out of the usual routine of life. Practically, this suggests that demand goods can be placed in an inconspicuous location and that impulse items should be placed in full view of every customer. In a grocery store one can place the meat, bread, potatoes, and similar items largely out of sight at the rear, and make the customer walk past tables and cases displaying impulse goods on the way back. Sales of small items like candy, cheese jars, and cigarettes have been increased many times

by placing them on the cash register or wrapping counter where a customer cannot help seeing them while waiting.

These layout suggestions apply chiefly to the small store and to the woman customer. Men are in more of a hurry when purchasing, and will refuse to walk very far to buy their demand goods of slight value. Shirts, collars, socks, neckties, drugs, and cigarettes are often placed at the right front of the main floor. The system of handling change in these departments must be expeditious.

3. DEPARTMENT STORES. In stores having a large amount of floor space and several floors, definite problems concerning the arrangement of departments arise. As a result of studies on customer habits several uniformities among stores have appeared.

On the main floor we find men's goods, toilet articles, stationery, and books. In the basement are household accessories, hardware, and possibly bargain counters. The lunchroom, if any, will usually be either here or on the main floor. The second and third floors usually contain the larger items of clothing, yard goods, sheets, and pillowcases. Above these are toys, sporting goods, luggage, furniture, rugs, and other articles of higher value and infrequent and deliberate purchase.

There are certain considerations behind these arrangements: (1) Goods which are bought in a great hurry or upon impulse are given locations which are prominent and easy of access. (2) Goods like furniture and suits may be placed in a less prominent location; they will be sought out, since the buyer spends more time considering them and he will wish peace and quiet. (3) Related departments are placed side by side. Examples are sporting goods and sports clothing, shoes and socks, shirts and neckties, and household goods of various types. (4) Goods which may be embarrassing to purchase should be placed in isolation, so the buyer need not be afraid of being seen by many people. Maternity apparel, reducing garments, wigs, trusses, and certain drug supplies would fall into this classification.

Aisles are planned for convenience and to lead customers in desired directions. It has been found that men almost universally turn to the right upon entering the store, whereas women turn by chance. It is for this reason that men's goods are placed at the right. Wide aisles allow persons to go to the rear of the store and

to the elevators without having to force their way through the crowds doing business in the departments toward the front. Elevators or escalators are necessary, for the convenience of women particularly. They hesitate more than do men to climb stairs, although they will go down into the basement readily.

C. Store Management

Let us now point out briefly a few points of selling strategy which are valuable in promoting sales, rather than of the individual salesman.

1. STUDY CUSTOMERS. By studying the habits, likes, and dislikes of customers one may learn how people behave and what they want, and treat them accordingly. We have already suggested the practical use of observations of shopping habits of people in regard to locating the store, laying out the departments, and placing the aisles. Some surveys have confined themselves exclusively to women, since they form such a great bulk of the buyers. Rather surprising facts are discovered when one ascertains who purchases various articles. For example, women buy a great deal more men's clothes than one might expect. Men buy most of the candy and flowers. Details concerning the placement and management of shops and departments handling these things can be worked out in accordance with such findings.

A survey which suggests many practical business policies to the merchant was conducted by Waters (4). Actual customers were asked to rate a large group of successful and unsuccessful businessmen on thirty items of customer treatment. The successful merchant was defined as one with whom the rater liked to do business; the unsuccessful as one with whom he did not care to deal. The findings are presented in Table 73. We see that there are a number of things which a successful merchant does and a number which he does not do. In general the customer prefers the merchant who keeps a full, reliable line of goods, gives everyone equal treatment, tries to solve with equity the problems of each customer, and furnishes satisfaction. The less successful owner fails to take interest in the individual customer, has a less stable and poorly organized business, tries to dispose of as much merchandise as possible without regard to its real desirability, and does not

TABLE 73. Characteristics of the Successful Merchant

Positive

Item	*Per Cent Yes*
Stable business	97
Uniform quality	94
Fair price	94
Well-organized business	93
Interest in customer	91
Full line	89
Same treatment to all	88
Satisfactory adjustments	88
Honest	88
Accommodation	85
Courteous employees	84
Courteous himself	83
Deliveries with dispatch	77

Negative

Item	*Per Cent No*
Tries to load customer	97
Overanxious to sell	95
Tries to rush purchase	94
Worried, preoccupied air	88
Long, personal conversation	84
Maligning competitors	84
Hard to reach (phone)	81
Misrepresents goods	79

stand in back of his goods to the greatest extent. It can be seen that mental set and the halo tendency have fine chances to operate in this questionnaire type of study, especially since the subjects were asked to select the merchants for their own rating. Bad traits which may not be deserved are likely to be attributed to merchants whom one dislikes or about whom one knows a few bad things. However, there are numerous concrete suggestions which can be adopted by a merchant who wishes to establish a permanent, high-class business, and to make himself respected in his community.

2. GREET CUSTOMER WHO IS WAITING. The owner should lay down a strict rule for his clerks to greet any new arrival immediately upon his entering the store, even if busy with present customers.

3. ALLOW CUSTOMER TO CIRCULATE FREELY. Counters and aisles should be made wide and open enough so that the customer can wander about at will. This will keep her occupied while waiting for attention and will establish in part a self-service system. In a grocery store the customer may have practically waited on herself by the time a clerk is free. Merchandise can be studied at leisure, since often the customer hesitates to ask the clerk to pull it down from the shelf unless she has a pretty definite intention to buy it. Prices must be plainly marked for this scheme to work well.

4. PLACE MERCHANDISE SO THAT IT MAY BE HANDLED. It has been said that an article in the hand is half sold. This applies to sporting goods like tennis rackets and golf clubs, and to tools, neckties, and canned goods. Articles placed on a rack should have their handles up and outward, in fact extending an invitation to be handled. Certain articles, of course, must be kept covered for sanitation, danger of thievery, and similar reasons.

5. HAVE SAMPLES ON HAND. Free samples of cookies, candies, cigarettes, and similar small objects of low cost can be placed so that customers can help themselves. Sales will be stimulated by this "impulsive" appeal.

6. PLAN DEMONSTRATIONS. Like free samples, demonstrations will attract attention to certain items: washing machines, stoves, foods and raw foodstuffs, paints, and automobiles. A small driving range will give a golfer opportunity actually to use clubs.

7. ESTABLISH AND KEEP GOOD WILL. So many points come under the heading of good will that we can do no more than hint at a few. Neighborhood and small-town stores depend a great deal on steady patronage. To do this they must make people enjoy trading with them. One of the best ways to do this is to stand back of one's goods. The better type of store will accept return of goods which have not proved satisfactory with complete cheerfulness, without any argument, and without time-consuming technicalities. They have found that losses sustained in this way will be more than made up in continued patronage. One who has been well treated will feel an obligation to give his subsequent trade to that store,

while a dissatisfied customer will not return and may even spread unfavorable and undeserved publicity against that place.

While we recognize that claims are representative of dissatisfaction, like employee grievances, the salesman and the owner have in properly handling them opportunity to retain a customer's patronage, create future good will, and to build up sales. The close contact with customers impresses them with one's desire to serve fairly and to deal even more honestly than is strictly obligatory. A claimant who receives prompt, cheerful, and satisfactory adjustment will become a walking advertisement for the company. It is easier to hold an established customer than win a new one, and suitable handling of claims is an important way to retain one's steady clientele. Finally, as in the exit interview or in tabulation of grievances, service can be improved by noting any commonality that may exist among complaints.

8. PROVIDE PERSONAL CONVENIENCES. The store will be more desirable to trade in if it maintains certain side lines—tea room, soda fountain, restaurant, branch post office, theater-ticket agency, lounges, play rooms for mothers to leave their children, etc. Some who come in to use these services will become customers, now or later.

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CHAPTER XXVII

THE CUSTOMER'S SIDE

I. Consumer Surveys

A. Types of Surveys

In the last few years there has been great development in research on the opinions of laymen about various topics. Opinions have been sought in subjects from social and political issues, or employee morale, to design of manufactured products. Perhaps most familiar to the general public is the political poll, where carefully worked out interviews or mailed questionnaires are used to predict in advance how an election will turn out. Perhaps some of the readers of this book have acted as subjects in such studies, or in economic surveys. In each case the goal is prediction of future behavior, whether political or economic.

Our major interest is in the field of advertising and selling. Up to a few years ago the engineering department planned a product, and the sales and advertising departments were given the task of disposing of it. If it did not sell, these latter departments were given the blame. Tests of the product, if done, were usually of an engineering nature—to see how well the car stood up under tough driving conditions, how many washings a shirt would survive, or how much weather a paint could withstand. Now the trend is shifting to the customer. The product is to be made for the customer as *he* wants it. A car or a shirt or a paint can be just as serviceable in a design, shape, or color which appeals to the buyer as is one admittedly excellent from an engineering standpoint but which does not meet the customer's personal preferences. Furthermore, to repeat a viewpoint mentioned in Chapter XXV, buying resistance is

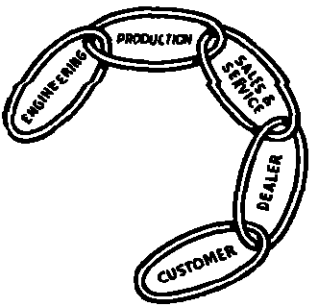
100 YEARS AGO

Under the conditions of the one man shop, with the head of the business serving as designer, manufacturer, purchasing agent, salesman, and service expert an intimate understanding of customer tastes and desires was automatically assured

MODERN INDUSTRY

By the very nature of things, the bigger an institution grows, the wider becomes the gap between the customer and those responsible for directing the destiny of the institution.

With producer and consumer so widely separated it becomes increasingly difficult to keep the business sensitively attuned to the requirements of the customer.



GENERAL MOTORS

There is a need for some kind of liaison which would serve as a substitute for the close *personal contact which existed* automatically back in the days of the small shop.

CUSTOMER RESEARCH

. fills this need by providing an auxiliary and more direct line of communi*cation between producer and consumer.*

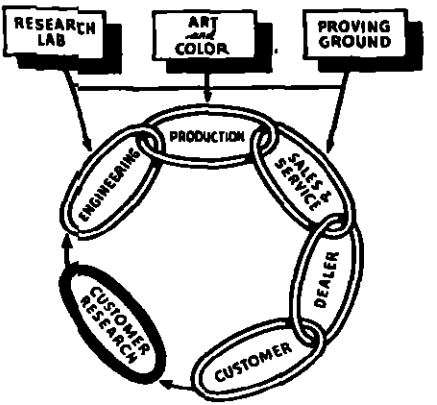


FIG. 49. General Motors Link Diagram, Showing Development of Modern Industry and the Necessity of Customer Research. (Courtesy General Motors Corporation)

to a large extent avoided if one designs the product to fit the potential buyer's needs and preferences, rather than trying to persuade him to buy what you have already manufactured. This philosophy of sales is best portrayed in Fig. 49, by a diagram which General Motors has used extensively in their publications, showing what the growth from small to large industry has meant, and what is necessary to restore to some extent the old-fashioned personal contact. In our present instance we see the circular relationship, starting with design of the car in accordance with customers' desires, going through the various stages of manufacture and sales, and finally redesign of next year's car to incorporate improvements suggested by this year's customers.

Might we emphasize right from the outset that while some of the surveys we are going to discuss are ones undertaken by large corporations, this does not rule out their use on the part of smaller concerns. It is just as important for a manufacturer with a plant of only a few dozen employees, or a merchant in a city of a few thousand population, to study his potential customers so that he can make or stock what is most likely to sell. A properly designed and administered questionnaire interview of a hundred persons can produce important results.

B. Survey Methods

There are three principal ways of conducting opinion surveys: by personal interview, by mail questionnaire, and by telephone. In all but consumption of time the personal interview is by far the best. By mail one must rely on the recipient to fill in and mail back his reply, which produces a shrinkage of as much as 50 per cent or even more. There is usually some selectivity in this loss; users of the product, for example, will likely be more interested and will tend to reply in greater numbers and probably with more care. Married women without children have more spare time than working women or those with several young children. Parallel, however, is the measured fact about doorstep interviews that there is some selectivity in who is home at a given time. Where a second or subsequent call was necessary, it was found that the group not at home on the first visit tended to represent smaller families, to have more adults working, to have an above-average income, and

even to have moved more frequently in the past than those found at home the first time the bell was rung. Finally, those contacted in a callback tended upon being interviewed to display more intense opinions—not necessarily for or against, but toward either extreme (*6*, p. 23).

To return to the mail questionnaire, there may also be omissions which cannot be filled in. Where cross-tabulating is to be done, an omission will invalidate the whole questionnaire. These will not occur in a personal interview. Also, failure to understand can be straightened out in an interview. Replying orally is easier than is writing, so will probably be done more conscientiously and fully.

The interview method is relatively laborious, hence costly. Perhaps we should say costly only by comparison, since its more valid results are usually well worth the difference. Another potential defect of the interview is the very point just mentioned as an advantage; namely, its flexibility may lead to inconsistency and abuse. An oral interview should be as standard as a printed one, and any departures must be rare and liberties taken only by the expert. Questions are usually read verbatim, and instructions are to avoid even emphasizing any one word.

Telephone interviews have been used somewhat, but have very definite limitations. They must be very short, specific, and easily answered. Often as many as thirty such brief interviews can be completed in a single hour. If private homes are called, every tenth name on each page of the phone book will furnish as close to a random selection as possible (beyond the undeniably important fact that only half the people have telephones, and these represent in general those with more money), whereas interviewing in specified neighborhoods may load in favor of certain income, occupational, racial, or even religious groups. An advantage of the telephone is that it may permit one to gain access to residents of well-to-do homes or offices of big businessmen, whereas all who have done personal interviewing know that it is often difficult to get by the maid or the secretary. Finally, telephone interviews have been found to be useful in quick spot checks where the time factor is important, such as whether one is listening to the radio, and if so if he is tuned to Smith's Coffee program.

While discussing methods of carrying on surveys, we might list a

few kinds of organizations which conduct them. We have mentioned large commercial companies. Trade associations, for single products such as oranges or cotton goods, may make surveys. Chambers of commerce represent businesses throughout one locality. Publishers of newspapers or magazines may study their readers' habits and preferences to assist in selling advertising space, and to guide their advertisers in planning appeals. The *Los Angeles Times* published a summary of its readers' income status as compared with other daily papers of that city, by districts, and claimed that almost 100 per cent of those with incomes over $10,000 a year subscribed to that paper, with other papers deriving the bulk of their patronage only from the lower-income group, which have far smaller individual and total purchasing power. *Collier's* surveyed 8000 homes in 125 cities of 2500 population or more in all parts of the country, and compared its readers with the totals for all 8000 (*16*). Such facts were unearthed as that average education of their readers was higher; more were in professional and in clerical and sales work, and fewer in labor or service occupations; average incomes were higher; more owned their homes or paid higher rent; and more owned automobiles (62 per cent versus 51 per cent).

Governmental agencies themselves have conducted surveys among citizens to find out how they like services being rendered, what other ones they might like, and how they would suggest improving present services. Politicians have surveyed opinions of voters in their home districts, which have guided even if not necessarily wholly determined their vote on certain bills.

We might also mention the existence of commercial research organizations. The Psychological Corporation of New York City is one of these. It is staffed with thoroughly trained and competent psychologists, one group of whom has as its function the conduct of market surveys. Companies will engage their services to devise suitable questionnaires, supervise their administration at selected sites throughout the country, and analyze and summarize findings. Such surveys are not cheap, but one may find his costs amply repaid if experts do the job, just as one hires a mechanic or an advertising agency to do work along other technical lines.

C. Designing the Questionnaire

Some crucial questions are: What information is to be sought? How are the questions to be worded? How long shall the questionnaire be? What form of questionnaire shall be used?

Design of a questionnaire is not easy. There are many pitfalls into which the unwary amateur can fall. Lest the reader become discouraged and wonder also whether we are not contradicting our earlier remark that a small city merchant can make good use of a customer survey, let us state that adherence to the principles we are about to suggest, plus consulting some of the books by experts listed at the end of this chapter will enable one to develop a very satisfactory questionnaire. But one in this position should stick strictly to the recommendations, and not risk short-cut methods. Enough sources of error are open to one on his first attempt without deliberately exposing himself to more.

Let us now give a number of pertinent suggestions as to the design of our questionnaire.

1. *Consider carefully just what items of information you wish to ascertain.* Let us remark that anyone's natural tendency is to include far too many items. He dislikes to exclude any bit of information. Go after just the important items, or interviewer and interviewee alike will become tired, bored, and disinterested; also the task of tabulation will be multiplied many times over.

2. *Make your first questions easy to answer and specific, to encourage* the interviewee and gain his cooperation.

3. *Questions must be short and unambiguous.* The interviewee is not always your equal in education, nor does he know what you have in mind, so plan your questions accordingly. For example, "What *kind* of tooth cleaner do you use?"—does this mean Kolynos versus Pepsodent, or does it really mean powder versus paste? In this instance the first alternative might use the term "brand," and the second "form"; "kind" is capable of too many interpretations.

4. *Save questions that may prejudice later responses until late in the series.* Suppose you are surveying use of a certain brand of cigarettes or canned soup, which you manufacture or sell. Ask general questions about cigarettes or soup first, or the customer will spot the sponsor and may "play ball" by giving too favorable

answers about the merits of the product or his frequency of using it. The writer can truthfully say that in assisting the Psychological Corporation with a number of their surveys he was rarely able to spot the sponsor, and where he could the identifiable queries came late in the series. In this feature, then, their questionnaires were excellently designed.

5. *Design questions so they can be answered concretely.* Questions that seem logical enough to the designer may be impossible to the interviewee. To a manufacturer the number of items purchased in a year is the important factor, but most consumers cannot give any such estimate. But they are able to say how often they have used canned soup in the last week or two, how many shaves they usually get from a razor blade, or roughly how many days a pound of coffee lasts. Let the manufacturer obtain such short-time estimates and perform his own multiplication.

6. *Avoid prejudicial questions.* "Are you in favor of the present huge governmental deficits?" will almost certainly bring "No" for an answer, whereas "Is it your opinion that in the present emergency the government must continue to spend more than it receives in the form of taxes?" will produce a much higher percentage of favorable responses. In the following question a single word was changed in the second set of answers, "Which of these do you think is the main cause now holding back greater prosperity in this country: (a) Business Leaders, (b) The New Deal, (c) Labor?" In the second form "Labor Unions" was substituted for "Labor," and the proportions selecting the three alternatives changed from 40, 35, and 25 per cent to 26, 33, and 41 per cent respectively—in other words the addition of the single word union produced an unfavorable set to one person out of six (*14*). Similarly, attaching a person's name, such as a governor or the congressman initiating a bill, may alter the opinion very drastically from that expressed when the proposition is put in purely abstract terms.

Suggestion is remarkably easy to produce by the wording of a question. In one instance (2) such a little change as "Is the service at Blank's reasonably good?" to "Is the service at Blank's all you could expect?" reduced the "Yes" answers from 60 per cent to 20 per cent. The latter wording elicits a more critical mental set. This huge difference produced by what one might presuppose to be a

relatively minor change illustrates vividly just why such care must be taken in the exact wording of the questions. Fortunately, most questions are simply worded and most people have definite opinions, so findings are generally pretty accurate.

7. *Be careful on questions which will hit the respondent personally.* Relative to curbing inflation, 85 per cent of people said that the government should keep prices from going up, but only 27 per cent agreed that wages and salaries should be similarly controlled. The latter of course affects one's pocketbook directly, and most people fail to see the circular relationship between the two that inevitably must exist.

8. *Make the questions reflect actual or probable behavior.* This suggestion is indeed a big bill and one on which definite rules are difficult to formulate. In one instance persons in the lower middle economic class were asked how much they expected to spend on the next rug they would buy. The replies, judged by evidences of present furnishings, involved sums averaging three to four times those estimated to have been paid for present rugs. One's fortunes rarely improve to an extent capable of producing such drastic changes in quality of home furnishings. Similarly, one driving one of the less expensive cars will often say that he hopes to buy a Packard or Cadillac next. Hope springs eternal in the human breast, but the pocketbook is rarely equally inflated. We must also take special care on questions which will seem to evaluate behavior, as amount of beer drunk, tobacco smoked, movies seen, pulp magazines read—or on the other hand the number of operas heard, churches attended, literary classics read. A person will much more readily admit that he drinks about two bottles of beer a day than to confess having consumed a hundred gallons during the past year. On a written questionnaire a militant prohibitionist or anti-nicotine advocate may refuse point-blank to answer questions on these topics rather than check the "Don't use" category, while naturally in the oral interview the examiner can make the proper check.

9. *Consider the type of replies to be sought.* Here are three forms: "Do you like mentholated cigarettes?" is a Yes-No item. "I would like my next car to have (a) 4, (b) 6, (c) 8, (d) 12, or (e) 16 cylinders," is in the multiple-choice form. "What features in a washing machine are important to you?" allows free expression.

There are some obvious advantages to the latter, but the interviewee may give a snap reply. Also scoring is made very laborious, as each handwritten answer must be read, and usually tabulation into several classes must be done anyway. In developing the questionnaire one may try it in free-answer style on a test group of a dozen or two, then draw up his yes-no or multiple-choice check list from these replies. It has been found that four or five principal factors include about 90 per cent of replies, anyway, so little information is lost, and much time in checking and scoring is saved by making the final questionnaire largely objective.

10. *Seek criticism as well as praise.* Many prize contests announced through papers or radio ask one to complete "I like Blank because . . ." They may increase sales because of the publicity and because they usually insist on replies being written on a wrapper. But they fail utterly by their very nature to assist the manufacturer to improve his product. It is said that one cigarette company received over a million replies in such a contest, but not one word of criticism about a factor which was causing sales to fall to half—the cellophane wrapper was very tight, and there was no tab to pull and break the seal. One should ask such questions as how can a cigarette package, a roll of film, an auto luggage compartment, or a gas stove be designed so that it is easiest and most satisfactory to use?

General Motors has surveyed preferences of literally millions of motorists on all important features of cars, such as shape of hood, body style, number of cylinders, and use of chrome, as well as accessories such as cigar lighters, assist cords, and ventilation devices. Their questions are put in such a nonprejudicial way that it would hardly occur to anyone whether any General Motors car at present has the feature he may be checking as desirable in his next car.

11. *Length of questionnaire* cannot be dictated, as this feature depends somewhat upon the complexity of the various questions, and to whom it is to be administered. If one wishes to use it on customers as they enter or leave a store, to greet them on a sidewalk, or to query them at a bus stop or commuting station, it must necessarily be very brief. At home, the interviewee will answer more at leisure. Possibly also the more educated audiences, such as a

survey among college students or professional people, will have their curiosity enough aroused to pay close attention to a fairly lengthy questionnaire.

12. *Test the questionnaire.* It is ideal to test the proposed questionnaire at its incipience on a small audience, make desirable revisions and improvements, and next try it on sample populations of several sorts before the final survey is set in motion. Such pretests should never be conducted on fellow employees or members of the organization conducting, but on small groups similar to those which will be measured on the final questionnaire.

D. The Sample Population

It sounds almost too obvious to suggest that a population to be representative of the entire group about whom one is concerned must be random. We cannot pretest all voters, all possible customers, all residents of a given city, so we must sample. Yet to make this sample actually random—that is, representative in proper proportions of all pertinent groups—is one of the most difficult tasks in surveying.

Actually a random population is anything but random, paradoxical as that may sound. If one questions the first hundred people on a downtown street, he will have undue proportions of visitors, unemployed, those whose business does not confine them indoors, and women who can be away from home. Ringing doorbells in the afternoon will fail to include working women and women who are inclined to spend the afternoon shopping or in recreation. In the evening one fails to find those who engage in a greater-than-average amount of social or recreational activities. But, all in all, home interviews can be planned to secure the best approximation to truly random samples.

So our population must be extremely carefully selected to ensure its actually being random. Gallup seemed to have an excellently controlled sample, until the presidential election of 1948. Political polls, to preserve their reputation, must be highly accurate, since the issues are so important, so many million people are vitally interested, and predictions can be compared (validated) against actual election returns. By contrast, a product survey does not have quite such direct comparison between findings and purchases. Further,

due to our electoral-college system, predictions must be by states as well as on gross nation-wide vote totals.

Major factors which need to have absolutely representative samples are these:

1. *Place of residence:* large city, smaller city or town, rural.

2. *Region of country:* the industrial East thinks differently from the agricultural Midwest, even apart from the single individual's occupation.

3. *Occupation:* level, and sometimes the exact vocation.

4. *Age:* in recent elections younger people have been predominantly Democratic and older persons Republican; in former elections age was not an important factor. Body style of car, and perhaps choice of socks and ties, will also differ with age.

5. *Sex:* while this factor is prominently mentioned, evidence indicates that woman suffrage only enlarged the vote, and did not change relative proportions. In economic surveys, however, the sex factor is undeniably important, especially since women spend four fifths of all shopping money, even more than 50 per cent of men's clothes being purchased by ladies.

6. *Income:* levels follow somewhat the age factor, in that those with higher incomes tend to vote for the party in power, as they have prospered under that system, or for the more conservative party, as they do not wish to change the type of society that gave them their material wealth. Unemployed and those in lower income brackets want either a change or the more liberal party in power.

7. *Minor factors,* of less general importance or of importance only in special issues, are such as education, religion, married or single, with or without children, whether wife is working, owning home versus renting or living in apartment, race, and whether one owns an automobile and expensive household equipment. Most of these factors are more important to the advertiser than to the political surveyor.

In economic surveys, especially for advertisers of certain products, one may desire to load his population to be surveyed in accordance with the probable market. It would be a waste for a manufacturer of deep-freeze units selling for several hundred dollars to interview persons of the lowest economic groups, whereas

in the political sphere these of course have their share of votes. Farm equipment is of interest to one audience only. A store owner must sample in proper proportions his total potential clientele, not only in his city but in nearby towns and rural areas as well. This may be rather difficult to control, as a midweek survey may load in favor of the city group and one done on Saturdays favors the country group. Such proportioning can usually be based upon recent census figures, federal or local.

An interesting case of an unexpected factor producing wide changes in figures was seen in a General Motors survey of customer loyalty—meaning intention to buy the same make of car next time (*8*). Whereas in 1941, a time of normal production, 84 per cent of owners exhibited such loyalty, in 1944 it had dropped to 73 per cent. This of course was produced by an uncontrollable factor, the war with its cessation of manufacture of new cars, which necessitated people running cars beyond time of customary trading-in, with attendant defects arising in more than usual frequency.

The *Milwaukee Journal* has an interesting method of obtaining proportional representation (*15*). Its survey covers hundreds of consumer items, principally those used daily: foods, canned goods, soaps, household cleaning materials, brands of tobacco and beer bought, and stores patronized. This is conducted for the benefit of its advertisers. Their method is a cross between the mail and the personal-interview types. Names are drawn from the city directory (not lists of their subscribers) and the six-page questionnaire is mailed in numbers calculated to produce 7000 replies scattered in proportion to population over 28 residential areas of all different economic classes. This is a little over 3 per cent of the total of approximately 210,000 households in greater Milwaukee. Recipients are required to bring the completed questionnaire downtown to the newspaper office for checking for completeness and adequacy of answers, and as a reward for their trouble they are given a sack of groceries worth over five dollars at market prices. Since the wealthier classes are not so highly motivated by this gift to come in from their suburban homes, a much greater number of questionnaires must be mailed to them to ensure filling their quotas. From past performance their survey experts know about how much shrinkage to expect from each group, and they mail in quantities

When shopping for groceries at INDEPENDENT neighborhood stores, which do you prefer? (Please check ONE.)

☐ Self-Service ☐ Clerk Service

Do you buy meats at the same store where you buy MOST of your groceries?

Do you buy fresh fruits and vegetables at the same store where you buy most of your other groceries?

On what day of the week are most of your groceries bought? (Check ONE.)

☐ Monday ☐ Wednesday ☐ Friday
☐ Tuesday ☐ Thursday ☐ Saturday

Does your independent grocer now make regular deliveries?

Do you buy liquid bluing?

What brand?

Do you use bluing in flake or crystal form for laundry?
(Do not include liquid bluing.)

What brand?

Do you buy bottled bleaching fluid?

What brand?

Do you buy POWDERED scouring cleansers?
(Do not include regular washing powder or bar scouring cleansers.)

What brand?

Do you buy package fabric dyes?

What brand?

Do you buy a liquid mouth wash in your family?
(Do not include hydrogen peroxide.)

What brand?

Do you buy toothpaste in your family?

What brand?

Do you buy tooth powder in your family?
(Do not include plain preparations.)

What brand?

Do you buy regular toilet soap?

What brand for bath?

What brand for hands and face?

Do you buy home permanent wave kits?

What brand?

Do you buy liquid shampoo in your family?

What brand?

Do you buy cream shampoo?

What brand?

What type of container do you prefer for a cream shampoo?
(Check one.) ☐ Tube ☐ Jar

(Each major question must be answered YES or NO. Then give brand name.)

Do you buy floor wax?
(Include either liquid or solid floor wax.)

What brand?

Do you buy wallpaper cleaners?

What brand?

Do you buy toilet bowl cleansers in cans or packages?
(Do not include drain cleaners, scouring cleansers, bleaching fluid or lye.)

What brand?

Do you buy package products for softening water?

What brand?

Do you buy any quick sudsing synthetic soap products (soapless suds)?

What brand?

Do you do dry cleaning (of any clothing) at home?
(Do not include wool renovators.)

Do you use a product especially prepared for this purpose?

What brand?

What package soap product, bar soap or other cleaning preparation do you use for:
(Write brand name on each line below. If a soap product, indicate whether BAR, FLAKES or GRANULES.)

General household laundry (brand)

Dishes (brand)

Fine fabrics (brand)

Painted walls, floors or woodwork (brand)

Where do you and your family buy MOST of your cosmetics or toilet preparations? (Check ONE. Do not give name of store.)

☐ Department Stores ☐ 5 and 10c Stores or Variety Stores
☐ Chain Drug Stores
☐ Independent Drug Stores ☐ House to Houses Sales Person
☐ Grocery Stores

Where do you and your family buy MOST of your drug products? (Check ONE. Do not give name of store.)

☐ Department Stores ☐ 5 and 10c Stores or Variety Stores
☐ Chain Drug Stores
☐ Independent Drug Stores

Do you buy liquid or cream hand lotion?

What brand?

Do you buy lipstick?

What brand?

Do you buy face powder?

What brand?

Do you buy facial cream?

What brand?

Do you buy nail polish?

What brand?

Do you buy rouge?

What brand?

Fig. 50. Sample Page from the *Milwaukee Journal* Annual Questionnaire Used to Determine Buying Habits of Residents of That City. (Courtesy the *Milwaukee Journal*.)

accordingly. Furthermore, as replies come in, they note numbers and mail to additional names in districts showing shortages. Four such mailings are carried on to bring out each district to its desired total. In all, 15,350 were mailed in 1947, and 7518 were completed and returned.

The Psychological Corporation divides people into four income brackets, based on U. S. Census figures. Naturally the interviewer cannot ask whoever comes to the door what the family income is, so several criteria are set up:

A—top 10 per cent in terms of income. Live in best sections, have two-car garage, servants living in house.

B—next 30 per cent. Largely one-family houses, but may be in duplex or better apartments. Upper middle occupational group—professional and business other than the most materially successful, well paid clerical and skilled factory workers.

C—next 40 per cent. Run of mechanics, factory workers, store clerks, routine office workers. Second-hand car if any, live in flats or cheaper apartments, mostly ice box rather than electric refrigerators.

D—lowest 20 per cent. Slums and tenements, largely Negro and foreign born.

Thus if 50 interviews are desired from one city, the proportions assigned will be on the above basis or 5, 15, 20, and 10 each. These will be varied on occasion in terms of the product or purpose of the particular survey, and farm interviews may be added. In one instance, where the sponsor was a dry-battery manufacturer, instructions were to conduct all interviews on country roads where rural electrification had not been installed.

A recent survey, supervised by a survey specialist connected with a large university, used the technique of spotting actual homes to be interviewed from aerial photographs. These were chosen to produce a representative sample of various types of homes from several parts of the towns and cities, and the interviewers were instructed to contact an adult living in those exact houses, regardless of whether he had to make one or several calls. Usually instructions are somewhat broader, such as to get 10 interviews in the 500 to 900 blocks on Elm Street. Another modification is to tell the interviewer to rotate among houses on the north, south, east, and west sides of blocks, avoiding corner houses.

How many need be sampled? This is one of the most important questions, but of late has become secondary to other considerations without which no prediction can be accurate. By securing huge numbers one undeniably obtains *reliable* figures, but these figures are *valid* only for the group tested. The sample, no matter how reliable, may not be valid for the population at large. The *Literary Digest* fiasco in predicting the presidential election in 1936 is well known to all students of this subject. They secured return post-card ballots from two and a third million voters, the names having been gathered from among telephone subscribers and automobile owners, which is where their downfall started. They predicted 55 per cent of votes for the Republicans and 41 per cent for the Democrats, with 32 states for the Republican party. The election returns gave 61 per cent of votes to Democrats, and all but two states. But the more perspicacious poll experts had already predicted this gross error, since they had found that 59 and 56 per cent of telephone and automobile owners favored the Republicans, and that only 18 per cent of those on relief would vote for Landon. *Fortune* predicted within one per cent of ultimate votes from a sample of only 3500—one tenth of one per cent the number of straw votes that the *Literary Digest* secured and which turned out so erroneously.

As to the actual number, this will depend somewhat upon the number of variables and the degree of accuracy one wishes. One who has studied statistics realizes that accuracy is not gained in direct proportion to the numbers added, but in square-root fashion. Tables of probability show that in a two-choice poll, like most political elections, accuracy within 5 per cent can be achieved with as few as slightly under 1000 citizens, properly sampled. But if one wishes to predict within two and a half per cent, half the previous departure from theoretically perfect accuracy, he will need to test 4000. Since in politics winning is all that counts, with a fairly sharp division such as 60-40 no further ballots after 1000 need be taken, but if it happens to come out as close as 51-49 or 52-48 further sampling will be needed. But in an economic survey one wishes to know proportions. For instance, it is not enough for an automobile manufacturer to know that he will sell more two-door sedans than four-door models, and that coupes and convertibles will be third and fourth in demand. He wants to know the exact number out of

100,000 cars to manufacture in each body style, not merely the rank order.

Where a number of variables are involved, say wide differences in opinions between city and rural dwellers, men and women, high and low income groups, young and older people, a much larger population will need to be sampled to balance out these several systematic factors. We might suggest surveying at least 1000 persons in a single variable proposition, such as a two-party election, with another 1000 for each additional variable which has significance in the case at hand. The *Milwaukee Journal* has found that the first 1000 replies give a good picture for some products, but that for others 5000 are necessary for a stable sample.

E. Selecting and Training Interviewers

To interview, especially in a house-to-house survey, the interviewers must be carefully chosen as individuals who have good personal appearance, meet strangers pleasantly, are mannerly, well-poised, energetic, and are intelligent enough to understand and follow instructions and to handle unusual situations. Women are often not suitable in the field, but may do well in a store or other fixed location.

Actually, since this book is addressed principally to college audiences, we might comment that the great majority of college students can make satisfactory interviewers. They are obviously qualified in intelligence, and the majority have common sense and personality requirements. The writer may observe that in considerable experience supervising surveys, he did select among college students somewhat judiciously, and only one or two out of several dozen tried out at one time or another failed to prove satisfactory. Occasionally an interviewer "goes sour," becoming careless about following directions explicitly, so has to be replaced on the list. Even on a single survey, one interviewer should be limited to about 25 interviews, as he tends to become stereotyped in noting replies after this number.

Training consists in instruction emphasizing the necessity of following directions to the letter, and hints on greeting the person answering the door and in conducting the interview. Directions

are given on methods of spotting homes of different economic classes. Each interviewer will be given a written schedule as to how many of each class of family he is to interview, usually with streets and blocks chosen by the supervisor as probably productive of such homes. If there are any age, sex, occupational, or other qualifications, these should be put into writing, with the supervisor retaining a copy, to prevent forgetting or misunderstanding. Usually the interviews are to be completed within a certain length of time, so that all responses are true for a certain week and hence are strictly comparable with each other.

Following these instructions, the interviewers, especially if they are participating in their first survey, are given some practical experience, such as interviewing the supervisor, each other, and finally a few friends whose questionnaires can be included among those to be tabulated. The supervisor may wish to accompany the new interviewer on his first two or three calls, taking care only to listen and to offer any suggestions only after leaving the premises of the person interviewed. The presence of the extra person may be a little embarrassing for both interviewer and customer, so this step may be omitted if laboratory training has shown the interviewer to be well informed and well poised. He should be reminded from time to time that regardless of his familiarity with the questionnaire he should read or quote each question verbatim, as any change in wording or emphasis can materially change replies, as we saw earlier. Checkup may be made on other specific instructions, for example to contact only housewives. Tendencies to short-cut by asking others—husbands, children, servants, or businesswomen—should be spotted and stopped immediately.

It might be remarked that Class B and C interviews (see page 628) are relatively easy, but Class A and D homes, representing the wealthiest and poorest families respectively, are much harder. The supervisor may wish to conduct the A interviews himself, as he will usually have personal acquaintances in a few of these homes, and assign the D interviews to the best-trained and most tactful student interviewer. Among the poorer classes, especially if English is not understood too well, it is often difficult to persuade the interviewee that one is not trying to sell something.

F. Interpreting Findings

Now that the interviews have been made and the questionnaires returned, statistical summarization, interpretation, and application are the next steps.

Tabulation of gross numbers and percentages of the whole for the yes-no and multiple-choice responses are easy enough. Where free expression is sought one will usually for practicality group replies into four or five leading classes. One cannot do much with isolated answers, but we are interested to see if any sizable numbers of interviewees make similar comments, favorable or unfavorable. Occasionally a single remark may seem of real importance, and a page or two of these may be transcribed into the final report, but usually these represent individual idiosyncrasies.

Cross tabulation is a serious consideration, since it may disclose important trends, but at the same time it adds immensely to the task of tabulation. In fact without machine scoring it is nearly impossible. It might be valuable, for instance, to find what body style of car a traveling salesman prefers, or for that matter any individual who drives more than say 20,000 miles a year. They probably would not want a convertible, since they have to drive long distances the year around, regardless of weather. And they might prefer a business coupe, with its large luggage space, rather than dirty the back seat with sample cases. What style do people of various ages prefer? Of various marital and offspring status? Do veteran drivers have different preferences from younger persons about to buy their first car?

With regard to the consumer survey of the *Milwaukee Journal*, all questions must be filled in or the whole questionnaire is considered invalid, since these cross comparisons are impossible. To the advertiser, especially in a special-purpose journal, such as one directed toward a trade, sports enthusiasts, women, or veterans, it may be vital to know whether those who own cars play golf in any greater numbers than the public at large, whether those who smoke cigars also drink beer, whether those with children have different food-buying habits than single persons or childless couples. An advertiser naturally wants to spend the least amount of money per potential customer contacted. It must be appreciated at the same

time that findings represent only trends, not absolute distinctions between groups. The majority of salesmen might prefer business coupes, but some buy two- or four-door sedans, convertibles, or station wagons.

One more consideration—if cross tabulating is to be done, any incomplete, obviously faulty, or apparently faked questionnaire must be discarded in its entirety. Most surveys have items interlocked, building up from one to the next, and any omission will spoil the whole. One hates to throw away ten or fifteen minutes' work, but in the end the greater accuracy is cheap economy.

To prevent omitted items, an alternative answer to some questions should be such as *don't use, don't know, never heard of it,* haven't made up my mind, no special opinion, am indifferent, and the like. These answers may shed light on subsequent questions. And in certain fields, especially politics, the undecided voter is the one who comes in for vigorous attention. Likewise, it is much easier to win over an undecided purchaser than one who has invariably bought the same brand for years and says he intends to purchase it again on the next occasion.

Validity of the survey has been defined earlier as the degree to which findings agree with actual behavior of those interviewed, or ideally of the whole population of which those contacted are presumed to represent an accurate cross section. In politics the ultimate validation is the poll, in business it is sales.

The *Milwaukee Journal* applied several tests to see whether its sample is a valid one of the entire purchasing population of Milwaukee. In two logical criteria, gas heat and auto ownership, it demonstrated that its sampling technique was excellent. From its 7000 interviewees, it found gas-heated homes totaled 243, which translated to the city's total of 210,000 family dwellings gave a figure of 7940. The gas company's records showed that there were actually 7981 gas-heated homes at that time. Projection of car ownership from the questionnaire sample group predicted 151,599 cars, whereas motor-vehicle registration for this area was 150,489—a variation of only seven tenths of one per cent.

If prediction turns out to be inaccurate there are four major reasons for such failure: (1) the population sampled may not have been representative; (2) the wording of the questionnaire may have

prejudiced replies in one direction, usually unintentionally rather than malevolently; (3) people cannot behave as they would prefer (purchase of a very expensive, high-quality item); or (4) preferences may have changed in the meantime. It is recognized in politics that not everyone votes, especially when an election is more or less conceded beforehand. Which voters, then, will be more likely to pass up their suffrage? It is also known that a rainy election day is unfavorable to the Republicans; since farmers predominantly adhere to that party and they have more trouble coming in to vote than those from the city Democratic strongholds. However, trends do not seem to change very much. On the basis of comparisons of straw votes as much as two months prior to elections, we would say that final campaign measures, whirlwind visits to key cities and eleventh-hour radio appeals, might as well be abandoned. Naturally, a survey today won't predict next year's behavior. Otherwise one might as well abandon all advertising and sales efforts. But changes are relatively slow, not overnight. The other two sources of error, erroneous sampling and poorly worded questions, lie in original planning. As in all forms of experimentation, ultimate reliability and validity depend upon sound design. *No amount of correction or complex statistics can compensate for* poor techniques. Occasionally a correction will be necessary, such as to make allowances for changes in population since the last census—but on the basis of known trends, and these should be kept as few and as proportionately insignificant as possible.

In drawing up summaries and conclusions, one must consider the experience of those who will read and act upon the report. Usually this report is only for internal consumption of certain executives of the sponsoring firm, not for the general public. If for the latter, it must be in the simplest and most comprehensible form, as witness the Gallup polls, syndicated in many newspapers throughout the country. Even within one firm, one must remember that not all higher executives are trained in statistics, nor will they take time to puzzle their way through a maze of complex tables and charts. The purpose of statistical summarization after all is to convey information to those likely to read it, not to impress them with your own statistical astuteness. Simple arithmetical comparisons and

graphic presentation in the form of pictures or bar diagrams will usually be adequate and most understandable.

A brief description of one's technique and controls, insertion of the actual questionnaire used, the principal findings portrayed in tabular and graphic fashion, a rapid-fire prose summary, and a few equally brief recommendations will usually suffice and be all that is desired. The remainder of facts about procedures and findings can be held in reserve, to be used if portions of the report are questioned for authenticity or if further details are requested. Too complex a report may kill the value of the whole program.

II. Buymanship

A. The Customer's Problems

As a partial counter to intense salesmanship and advertising, in recent years growing thought has been paid to the other side of the picture—building up sales resistance, evaluating selling appeals, intelligent buying, and getting the most for one's money. The term "buymanship" has been coined to cover this field.

Caveat emptor is a Latin phrase, traced back more than 2000 years, meaning "let the buyer beware." It showed that the Romans recognized that merchants and salesmen were likely to take advantage of customers' ignorance and weaknesses, and the saying suggests that any one of us as a buyer should be suspicious and on guard all the time.

As has been pointed out, mass-production methods have separated producer from consumer, and the latter has little chance to know much about materials or manufacture, and little chance to register complaints, as he can with a small town shopkeeper, or with his milkman, barber, or restaurant keeper.

While there is no logical reason that we should feel the necessity of apologizing for discussing the buyer's point of view, let us say at the outset that we are not combatting commercial enterprise, or legitimate advertising and salesmanship. This remark is given, since it appears that every time anyone mentions that the poor customer should have his side too, some trade journal, advertiser, or chamber of commerce is sure to rise in wrath and accuse the speaker or writer of trying to wreck business. The writer himself

has been abused vehemently by a professional advertising weekly for devoting an hour of class time to this subject, in spite of the facts that several hours were devoted to advertising and selling, and that the class had over 100 pages to read on these latter topics.

We are only interested here in one's intelligent use of his money. We are also operating under the assumption that one will spend all of his income, either directly for purchase or indirectly in the form of insurance or other investment, so we are not in any way advocating restricting of business. In fact, one might say that our desire is just the opposite—by using one's money more intelligently for essentials he will have more left over for luxury and cultural items, so actually more, rather than less, goods are purchased if one makes the best use of his cash.

Furthermore, 100 per cent of us are customers, including the professional advertisers and salesmen, will always remain such, and will bring up our children as such. So no defense of a few pages for this purpose should be necessary or called for.

Thus the president of Consumers' Union asserted that we should have this fourfold goal:

1. An impartial check on the quality of goods, in nontechnical terms, and free from bias and excess claims.

2. Legislation to eliminate worthless and injurious merchandise from the market, and to eradicate false and misleading advertising.

3. Plenty of goods, as they become technically available, not restricted to preserve monopolies and high prices.

4. Education for intelligent buymanship, which is even more important than instruction in salesmanship and advertising.

B. Sources of Information

In addition to individual customers devoting time and energy to reading, thinking and planning, and doing what informal research a private individual can do, several forms of organization have risen to help. The federal government has furnished some assistance in research on consumer goods and in protection in such forms as pure food and drug laws. Their research is primarily conducted for their own uses, which includes army and navy, hospitals, offices, and other agencies. Many of these parallel civilian uses. Pure

food and drug laws are good so far as they go. They have done a lot to see that we get unspoiled and bacteria-free meat, clean milk of a specified butter-fat content, poison-free drugs and toilet preparations. Required labeling demands publishing amount of contents in ounces or other standard measure, grades (peas, olives), often (catsup for example) the exact chemical constituents (even if not exact proportions), and announcement of such items as artificial color or preservative, and use of substitute materials, reworked wool, etc. Local ordinances usually call for inspection of restaurant kitchens, and often of meat and milk-producing cattle. Unfortunately, these regulations apply only to goods for sale, and do not cover advertising claims. One who decides to buy a given article after reading an advertisement may not stop to read fine print on the goods themselves, if such is present, and has no comeback if he has been swindled or worse still if a member of his family becomes ill. Further, as for much other law enforcement, the number of inspectors is rarely adequate to check on proper weight, measures, and purity. Usually we have to wait for some customer to start suit; then it is of course too late for him. And the burden of proof is on the customer, as of course by our laws one is innocent until proved guilty, and perhaps the bad food has been thrown out or a countercharge of unsanitary cooking may be made. One further point is the punishment that may be inflicted. In one instance a company flooded the market with thousands of cans of salmon, badly spoiled and under conditions of purchase which hardly left doubt that the purchaser knew its condition—and the fine was $50.

One final shortcoming of the Bureau of Standards is that it is subject to the same lobbying pressures that inflict other branches of the government. Thus while it may use its findings—and many are as well-conducted research projects as one could wish for—for its own guidance in purchasing sheets or prunes for veterans' hospitals, it will not disclose them with frank names of products to "us the citizens" even though we all pay through taxes for the maintenance of these bureaus.

Accordingly a number of communities, and one or two semi-commercial organizations, have organized research groups, which study and sometimes make tests of various commonly purchased consumer goods. One of these, Consumers' Council, Westchester

County, New York, resulted in a book on practical buying hints for everyday goods—men's and women's clothing, yard goods, leather goods, beds and bedding, the medicine cabinet, etc. It is to be hoped that such organizations will become more numerous as time goes on, not necessarily to the point of developing a book, but of equal local value. After all, it does not take many hints in the right direction to save the typical family $100 a year, and give them that much more to add to their yearly vacation budget or to spend on Christmas presents.

Home-economics departments in colleges and high schools give in classes and through publications positive recommendations and instructions in proper technique of buying common articles. One may learn how to select meat, leather goods, clothing, canned goods, and household articles. Hints are given on labels, grades, and materials. One can find how to tell wool, cotton, and rayon apart; how to ascertain whether a fabric is pure or filled; whether leather is a split or top grain; and whether a Number 1 olive is the best grade, or perhaps second or even third from best. (The smallest olive is a "large"; they go up from there to the largest, known as "Super-Giant-Colossal.") These recommendations, given by departments of state-supported universities, usually avoid mention of specific brands for obvious reasons. In fairness it might be said that not only might there be unpleasant pressure from large private or corporate taxpayers, but brand qualities and specifications do change, and good advice today may be worse than useless a year from now. But many general hints can assist one greatly in buying articles with good quality of materials, good construction, and in general of a reasonable price. Their facilities and time for extensive research are usually limited, and if they attempted to keep up on the many brands of all products, they would be faced with a hopeless task. Even granted this limitation, such agencies as these home-economics departments, consumers' clubs, and commercial organizations to be discussed in the next paragraph undoubtedly exercise salutary influences on many manufacturers, and keep them in some sort of check for fear of potentially negative recommendations.

Consumer's Research is the name of perhaps the best-known semicommercial organization, which issues to its subscribers confidential reports of its tests on products from foods to clothing to

radios. (We are not too concerned with luxury items; there is too much to be done with foods, clothing, and household supplies of necessary nature.) Consumer's Research buys its samples on the open market, thus ensuring itself of having a random selection of their products, and then gives them rigid tests on their various features. Generally the rating is *Recommended, Intermediate,* or *Not Recommended.* They give reasons for their judgments, those for Not Recommended being such as too costly for value received (even though the article itself may be perfectly good), costly in operation, wears out quickly, absolutely ineffective (some insect poisons or drugs), fails to come up to claims, contains poisons, quality not uniform, etc. This organization has been criticized in many bitter attacks as being hypercritical and cynical. Possibly so, but their conclusions are based on tests and first-hand observations. The products they recommend are those which appear satisfactory both absolutely and in terms of price charged. Their impartiality is demonstrated by their sometimes recommending one product of a manufacturer and assigning a Not Recommended tag to another of the same concern.

C. Quality and Price

The relationship between quality and price has been the subject of a good deal of discussion. While we recognize that there does exist a fairly good degree of correlation between the two, there are enough cases of discrepancy so that one would hesitate to give a blanket recommendation that the customer buy the more expensive item as a general rule. Rather we would suggest that the customer insist that he be shown just how the extra price is accompanied by a correspondingly greater quality, and not be satisfied with generalities. The most obvious lack of correspondence is that the extra price is not accompanied by an equal increase in value. One would have great difficulty demonstrating that with modern cars and modern roads a large auto for $3000 is worth double a smaller one for half that price, especially considering greater running, upkeep, insurance, and depreciation costs. It must be conceded that this value may be derived more in satisfaction and prestige than in anything measurable. The same applies to an expensive suit of clothes, although here we must recognize the social importance to

men in certain positions. In some instances emphasis on quality is foolish, such as a man buying a five-dollar paintbrush to paint a few square feet of new kitchen shelves, or an expensive pair of slacks to use while weeding the garden (a pair for over $30 has been advertised for this purpose in a garden magazine).

Price depends, as we all know, somewhat upon the store at which one deals, even for identical merchandise, and for merchandise of equal quality but bearing a different brand. Nationally known chain mail and retail stores carry merchandise made to strict specification by leading manufacturers, but bearing the chain organization's brand name. Some of these stores stand back of their merchandise as fully as any locally owned store, and in some instances better, so the customer has good protection. A little knowledge of what to look for in the goods one is purchasing is desirable, as much cut-rate merchandise is cut-rate in quality as well.

D. Some Frauds

Several types of frauds connected with high-pressure advertising, and made possible by consumers' lack of information, are:

1. Worthless articles;
2. Huge prices for patented or branded articles;
3. Harmful substances;
4. Persuading one to throw away perfectly good items.

Patent medicines, while they are usually pure enough nowadays, often are no good whatsoever, or they may be simple compounds selling for truly prodigious prices. Authorities in whom the author has confidence have stated that aspirin selling for less than ten cents a hundred is usually as effective as that selling for perhaps a penny apiece, since the chemical is a very simple compound, and can be produced very cheaply. Actually, two pharmaceutical houses produce almost all the aspirin sold in the country, yet note the number of brands advertised, and the wide range of prices.

Branded names add greatly to prices. Witness the cost of tooth cleaners, powder or paste. Yet one which dentists will agree is as effective as any, and more effective than most, can be made up at home at almost no cost, with three parts soda and one part salt—

and a little peppermint or wintergreen added if one wishes a pleasant taste. Universities have bought laboratory alcohol for twenty-five cents a gallon, yet in a neat bottle and with a gaudy label the same thing sells for twenty-four times that price as rubbing alcohol. One can buy plain carbon tetrachloride for cleaning fluid in bulk at a tenth the price it comes in a small bottle with a pretty label.

Newly patented articles are sold for terrific prices, far beyond their cost of manufacture plus reasonable profits and a good royalty to the inventor. In two years we have seen ball point pens come down from $15 to under $1. Electric clocks have taken almost as much a drop, although over a longer period of time. While you and I cannot control the established price, we can restrain our enthusiasm and wait a few months until the price settles within reason.

Harmful substances may be contained in drug preparations. A reducing chemical was found to contain thyroid extract in dangerous quantities. It will reduce one, yes, but may also seriously damage his heart in the process. Liquids to beautify the eyes and eyelids have been known to cause serious impairment to the eyesight.

Absolutely indefensible is use of the power of advertising to make one throw away perfectly good items. It is a scandalous waste of money and rapidly dwindling natural resources for advertisers to convince us to throw away good crankcase oil and put in new every 1000 or 1500 miles. Neutral lubricating engineers (not connected with any oil company, hence not concerned with sales volume) have said that if the car has an oil filter one may use his oil indefinitely, changing perhaps once a year or after ten thousand miles, replacing the oil filter at the same time. After all, if one adds a quart about every five hundred miles, it gradually replaces itself. Darkness of color, shown one by service station attendants as evidence that a change of oil is needed, is irrelevant. This can be produced if one boils a pan of new oil on his stove, without ever using it in the motor. The writer might observe that he has driven nearly 200,000 miles in the last 15 years, with only yearly change of oil, and has had neither any motor trouble nor undue consumption of oil—in fact one might say an unduly light consumption of oil, because I have not thrown away several good quarts every month

or so. One is recommended to have oil changed after 1000 miles in a new car, to get rid of any small metal chips that might appear in the breaking-in process, and perhaps every 2000 or 3000 miles if he drives regularly on dusty country roads.

E. *Buying Foods and Clothing*

A few sample hints on buying two common commodities may be given. With foods, watch your pennies—one can take advantage of this highly competitive and fairly well standardized industry and save a good many dollars in the course of the year. Savings may seem small on any one item or during any one shopping trip, but since one shops for food almost every day he can squander a lot of money in a year's time unless he develops sales resistance and careful buying habits.

Shop around, and compare quality with price at various stores, chain and privately owned. Read labels carefully to ascertain grades and weights. Containers can create definite visual illusions as to size, so check the labels. Bulk items, such as sugar, flour, dog biscuit, rice, or macaroni products, may cost far less than the same quantity in a fancy colored package—although these are becoming increasingly hard to buy in bulk. Buying flour, sugar, or lard in large units has economy, if there is no danger of their not being used up or of going bad. Prepared items, like pancake or biscuit mix, are extremely expensive in the end, and are a gross waste unless one's time is very limited, say a working person who has to prepare his or her meals after work.

Learn grades of olives, meats, tinned seafoods, dairy products. Buy from a trustworthy dealer, in a sanitary market, from frank and painstaking salesmen. One should also consider waste; certain cuts of steak and practically all chops have as much as half their bulk in bone and inedible fat and gristle, so their eventual cost per pound may be double the list prices, which are very high anyway for these choice cuts. Recognize luxury items as such—fancy cheeses, tinned meats, unusual seafoods—and buy them only for special occasions, not regular family meals.

Fabrics constitute a special field in themselves, so we cannot hope to give more than a suggestion or two here. One should be warned against the common use of fillers in shirts, dresses, sheets, and

towels. The goods are made to appear heavy and of fine texture, but one has little more than cheesecloth after the first washing. One may sometimes detect these frauds by moistening the tip of the finger and rubbing it over the fabric, or by examining, if possible, a sample and unraveling it.

Likewise, fabrics may be tested for actual composition. Wool may be spotted by its being pulled apart easily, leaving a curly end, and when a fiber is touched with a match it burns slowly with an odor like burning feathers. Cotton leaves a fuzzy end when broken, burns readily and smells like burnt paper. Silk breaks with smooth, straight ends; it burns rapidly with a black beaded edge. These breaking and burning tests will show mixtures and weighting to some extent. Standard goods are usually labeled as to composition, but unfortunately not only are these not always present, but trade names are devised which barely evade the law but are designed to deceive all but the expert. In furs we have an outstanding situation, wherein an esoteric name like Fijian mink may mean the common rabbit, dyed in a certain way. These hints, it must be emphasized, are only a few elementary samples, and one who wishes to buy with his eyes open is strongly advised to read in detail chapters from any one of a number of excellent books on the subject.

One need not be an expert, however, to check certain aspects of manufacture. In buying a pair of trousers or a dress, one should turn it inside out to inspect stitching and sufficiency of material in the seams, buttonholes, sewing of buttons, etc. With less-expensive merchandise one should be on the alert for short cuts taken to save money. Men's slacks may be made without suspender buttons, watch pockets may be missing, and the cuffs may have so little extra that it is impossible to let them out even a fraction of an inch. Another device for skimping is to cut the seat of trousers or underwear tight, which is not only uncomfortable but predisposes toward ripping. On sports coats, note lining, stitching, quality of buttons especially if of novelty variety, matching of pattern where two panels are joined together, and fullness in the cap of sleeve and across the shoulders. One should realize that soft fabrics look and feel nice but presage about half the wear of a hard finish such as worsted.

F. Summary

We may summarize these suggestions, together with a few new ones, in the form of general buying principles, which can be applied to a wide variety of products.

1. Give mature consideration to what you want, and save both yourself and the salesclerk time and effort.

2. Don't buy what you don't need; this is poor economy. Don't be afraid to leave without purchasing anything if the store does not have the exact item you want. Women have less hesitation to do this than men, who seem to be embarrassed and buy something anyway.

3. Buy from reputable places which stand back of their merchandise, and you will save many bad bargains for which you have no recourse.

4. Be "from Missouri" with regard to advertising and sales arguments. Make the salesman show you the merits of the product; that is his duty and why he is present.

5. Take advantage of sales in off seasons, if you can store the goods.

6. Choose the appropriate quality, neither needlessly high nor too shabby.

7. Watch *brands, materials, grades, sizes, and weights.*

8. Don't buy a greater quantity than you will probably use.

9. Don't be influenced by salesmen or friends; buy what you yourself have concluded is best suited for your needs.

10. Tell the dealer if an article turns out to be extra satisfactory or distinctly unsatisfactory. The customer should ultimately determine what the dealer is to carry in stock, and beyond this, what the manufacturer produces.

11. Watch your finances. Don't buy what you can't afford, and don't overload yourself with installment buying. The latter not only ties up your financial future, but costs more with interest charges and one's share of making up losses from those who have defaulted on their installments. Most of us feel much happier if we are as free from debt as is humanly possible and can enjoy the feeling that our possessions are really wholly our own. One is

reminded of the young couple who said, "Two more installments and the baby is ours."

12. One last thing—DON'T BE HASTY. If you have the slightest hesitation or doubt that you might not really need the article, a good precept to follow is to WAIT A WEEK. One will be surprised how much money he will save in the course of a year if he puts this test to himself regularly. One may ask himself these questions: Do I really need that item? Is that brand the best available? Is it worth the money to me? Will I use it often enough to be worth owning? Is another brand as good, but less expensive? Is there any chance that it might turn out to be a complete swindle? If answers to all these questions point in favor of buying the article, one may purchase it with some confidence in his wise choice. If not, wait a week; then ask the questions over again.

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PART V

PSYCHOLOGY IN THE PROFESSIONS

CHAPTER XXVIII

PSYCHOLOGY, PSYCHIATRY, AND MEDICINE

I. Definitions of Fields

A. Psychology

Psychology is the study of the behavior of living organisms. As we have discussed it throughout this book it deals with the normal adult human being. Its aims are both theoretical and practical.

B. Medicine

Medicine is the diagnosis and cure of organic ailments. Cures are through drugs, operations, or plain rest which permits the body or its separate organs to mend themselves. It assumes that in illness there is something organically wrong, such as a lesion, infection, or chemical disturbance. This science, or group of sciences, is highly practical. When theories are drawn up or research is undertaken the purposes are specifically to advance practice.

C. Psychiatry

Psychiatry is the study and cure of mental or "functional" disorders. Because of emotional tension people develop various forms of abnormality. Supposedly these have no organic bases, although organic disturbances may follow. This field also has a practical aim, but there are so many disputes on so many topics that a good share of the discussion is theoretical.

D. Psychoanalysis

Psychoanalysis is actually one branch of psychiatry. It is perhaps more theoretical than most other branches, because of some of its

radically different claims. It is characterized chiefly by its insistence on strong driving forces within the individual, which, when properly balanced, keep one living a normal life, but which cause abnormalities when thwarted.

II. Mind-Body Relations

Speculation about relationships between the body and the mind are as old as mankind has indulged in philosophical thinking. Many experiments have been conducted to uncover some anatomical or physiological basis to intelligence, aptitudes, personality traits, or emotions. Summarization of hundreds of such studies may be seen in Paterson's excellent book, *Physique and Intellect*. That relations between mental and physiological functions are close is acknowledged by the introduction a few years ago of the journal of *Psychosomatic Medicine*.

A. Theories

There have been four chief views suggested, two dualistic and two monistic. (1) *Psychophysical parallelism* postulates that the body and the mind are two entirely separate entities. Neither is capable of affecting the other. If the two happen to be engaged in identical activities simultaneously, some third antecedent cause must exist, much as a train dispatcher regulates the movement of two trains at once. (2) *Interactionism* is the common-sense or layman's view. While the mind and body are separate they can and do influence each other. (3) *Psychical monism* assumes mind to be the only reality. Physical events and objects exist only in so far as there is a mind to perceive them. Their reality can never be proved apart from sensations. This view is hard to understand in the light of plain common sense, and is not much held even by the more abstruse scholars. (4) *Physical monism* goes to the other extreme and claims that everything is physical. What we term mental is only the workings of the brain. Admittedly the brain is far more complex than any other organ, but its output is just as physical and ultimately as explicable as the output of the heart or kidneys. Science will eventually furnish all the answers, and there will be no room for soul, mind, or consciousness. Most of us will grant

at least that all behavior involves nervous and bodily activity—but whether we can end there is open to argument.

B. General Observations

Aside from abstract theorizing, it is evident that what we call the mind controls the body in many daily life events. One raises his hand to brush off a fly, he wishes to reach for a glass of water and does so, he is worried and his health suffers. The reverse is likewise true. In delirium or after indulgence in fermented beverages his mental processes deteriorate.

The old saying, "A sound mind in a sound body," has received definite confirmation. It is said that the great prophet Buddha practiced, as was the custom, starvation and other denials of the flesh, which religious fanatics have practiced to divorce the body from mundane considerations. He found he came no nearer the ultimate truth through his procedure—in fact, he found difficulty thinking at all in his weakened state. He then decided the only way to think clearly was to develop a healthy mind inside a healthy body.

C. Intelligence and Physique

Terman (*13*) has definitely refuted the traditional concept of a scholar as a man of inferior physique, and the converse assumption that a large man (e.g., athlete) is *ipso facto* stupid. He studied physical, intellectual, and personality traits of nearly a thousand "gifted" children—those with IQ's over 140. One of the most striking findings was that these children averaged about two inches taller and ten pounds heavier than children of the same ages but with just average intelligence. Puberty occurred earlier, general physical development was better, there was less illness and less chronic poor health, and sleeping habits were better. In all significant ways this group, chosen solely because of its intellectual superiority, showed physical and physiological acceleration as well. This is certainly striking evidence in favor of the closeness of relationship between mental and physical traits.

D. Personality and Physique

There have been a number of attempts to correlate structure with behavior characteristics. No definite correspondence exists between

facial dimensions and personality traits. But this may be interpreted as not finally conclusive, but rather as suggesting that if there is any agreement, it is not that simple; if any exists it must be between more complex traits and perhaps with functional rather than structural characteristics.

A study which created quite a sensation when it was first reported was that by Kretschmer (*8*) on reputed correspondences between body build and type of insanity. He classified patients (and all humans) into three general body builds, asthenic, athletic, and pyknic. The asthenic person is tall and thin, long-legged, and narrow-chested. The athletic type can well be imagined from the name: muscular, large chest, symmetrical development. The pyknic build is that of the typical fat man: short legs, large waist, sloping shoulders, and practically no neck.

Kretschmer early noticed that certain clinical forms seemed to go with certain body builds, so he collected data and made a distribution, cited in Table 74. The dichotomy of clinical forms is the familiar one, and the general symptoms are described in Section VII of this chapter.

TABLE 74. Classification of Manic-Depressive and Dementia-Praecox Patients According to Physical Types

	Manic-Depressive	*Dementia Praecox*
Asthenic	4	81
Athletic	3	31
Asthenic-athletic mixed	2	11
Pyknic	58	2
Pyknic mixed	14	3
Dysplastic	0	34
Deformed and uncataloguable	4	13
	85	175

The almost perfect correspondence of certain specific body builds with the two major clinical forms is truly startling. The fact that the number of cases is fairly large and that the author acknowledged some cases of divergence leads us to accept the results as valid. Yet from several later investigations there has been little in the way of confirmatory evidence.

Granting for the moment that such findings are valid, do they apply to normals? Very superficially, manic-depressive psychosis has been compared with an exaggerated extroversion and dementia praecox with an exaggerated introversion. Would, then, extroverts tend to be overweight, and introverts to be thin? The present writer (7) did try to check this hypothesis, using personality-test data on several hundred college students, and height-weight ratios computed from the college physical-examination data. There was only the slightest correspondence between personality scores and body build in this large group. And there were plenty of stout introverts and skinny extroverts.

To discuss in detail other mind (behavior) and body relationships would consume too much space here. But we might add a few topics in which correlation has been demonstrated: glandular function and personality changes, emotional states and stomach ulcers, brain injuries and loss of intelligence and memory, hydrocephaly and feeblemindedness, syphilis and mental deterioration. Also we might mention suggestion as causing or curing illness—seasickness, allergies, and effects of certain drugs and medicines.

E. Implications

While evidence may be inconclusive on many topics, there is no doubt that mind-body relationships exist in close fashion. What mind-body theory this or that bit of evidence might support is irrelevant. What concerns us is the fact that the two functions are intimately bound up with each other, whether as one or as two. The value of this assumption will be important when we discuss functional abnormalities and psychological treatment of medical patients.

III. Common Characteristics of Abnormality

While there are several major clinical psychoses, and dozens of independent symptoms, there are several features present in all classes and degrees of mental abnormality. These are presented not only to clarify our subsequent discussion, but to help the reader build up a proper point of view toward persons who are suffering from these disorders as he may meet them in daily life.

A. Quantitative Divergence from Normal

There are no such things as definite insanity or unqualified normality. No one can be found who is absolutely "normal" or "average" in every respect. If a man is very fond of golf or fishing we would not consider him abnormal, but if he indulges in these hobbies to such an extent that his business and family suffers, we would say at least that he was rather unbalanced even if harmless. Yet if he became violent and threatened homicide only once or twice in his life, he might have to be separated from society. Hence the results or potential results of one's condition, as well as his exact mental and emotional state, determine whether he might be termed insane. It is small wonder, then, that in court trials equally eminent and honest psychiatrists disagree as to whether a defendant shows enough divergence from the normal to be considered insane from a legal standpoint (which we shall see in Chapter XXX means unable to restrict his behavior to what the law defines as proper). We may further add that what in our society is termed definitely insane passes unnoticed in another, and vice versa. So we are confronted with an apparent inconsistency, in that insanity is considered as the degree of departure from normal, yet in one case a much smaller departure than in another will cause an individual to be considered over the line.

B. Emotional Origin

Abnormalities are practically always caused by some sort of emotional disturbance or conflict. The symptoms, then, are irrational and cannot be subjected to the usual test of reasonableness. The patient may recognize this himself and still have trouble avoiding the emotion in spite of his attempted rational outlook, just as one might be afraid to walk on a dark country road at midnight even though he realizes that there is no reason to be scared.

C. Conflict and Escape

Conflict and escape may be found behind nearly every case of abnormality. One system of ideas comes into conflict with the rest of the mental contents and if the conflict cannot be resolved satis-

factorily a serious emotional disturbance results. Some sort of escape mechanism is then devised, some of the more common being a logic-tight compartment which keeps one idea from coming into contact with others, an amnesia which causes temporary loss of memory, a repression into the unconscious of some particularly painful material, a phobia, an obsession, or a delusion.

B. Little Intellectual Impairment

The terms "cracked" or "batty" often applied to inmates of institutions indicate an entirely wrong assumption, that such patients have deteriorated. Actually, since the cause is emotional conflict, rarely is there any intellectual decline. A person may not talk reasonably if the discussion touches one of his symptoms, say a religious maniac, but otherwise he is as keen as he ever was. If one visits an institution he will find himself able to discuss with virtually all the inmates current events, etc., as readily as with the typical stranger he meets in a bus or store. Only rarely does one appear unusual. In a few organic psychoses, such as senility or paresis (advanced syphilis), there is genuine intellectual deterioration.

E. Little Disorientation

The cartoons of asylums peopled by persons cutting out paper dolls or dressed like Napoleon are grossly exaggerated and actually apply to a very small share of patients. A large proportion know just what is going on around them and can usually discuss their own condition with their doctors in a manner as rational as that in which the average person describes a purely physical ailment such as stomach trouble. In fact, the great majority not only understand but are unusually sensitive about their condition. In view of this, the writer has always been violently opposed to trips to institutions which seem to have as their main purpose morbidly staring at the unfortunates. If one is a serious student of mental disorders, he may derive great profit from sitting in a staff clinic, but this must be done singly or in small groups. If you visit such an institution or have contact with a mental case on the outside, treat the patient naturally, as if you suspected nothing. This is best for patient and all concerned.

F. Predisposition in Personality Weakness

If one reads a good many case histories he is bound to be impressed by the fact that the exciting causes (the ones which immediately precede the breakdown) are almost invariably trivial, rationally considered. Frequent causes are death of a relative, disappointment in love, business failure, or some disgrace. While these incidents are distressing enough, some of them do happen to everybody at some time or other, and yet the great majority of people do survive them without serious consequences. This means that there is some weakness in the synthesis of the personality, and that breakdown has resulted from an emotional upset which does not affect so seriously others with more stable personalities. This is similar to the individual differences in susceptibility to colds among various people living in the same environments.

G. Sheltered Environment Often Relieves Tension

Generally there is at least partial recovery when the source of conflict is removed, as in a sanitarium where all worries about job, finances, marriage, family, ambition, and other phases of competitive society are absent. But if they return to society, with the same problems which caused the breakdown, the symptoms are likely to return. They are in the same status as an arrested tubercular case; as long as they rest and try to do nothing they are all right. It has been suggested that those who seek monasteries or convents, or undertake a simpler vocation than their true aptitude warrants, are perhaps consciously or unconsciously dodging the responsibilities of a complete life.

V. The Principle of Functional Ailments

A strict medical interpretation assigns organic causes to ailments. There is some physical or chemical cause, such as a lesion, break, infection, poison, or abnormality of cell structure. The advance of science has perhaps favored this outlook. As more mechanistic explanations and proofs came forward, there arose a tendency to regard as merely baffling those symptoms which defied a physiological explanation. In cases of abnormality, the seat of trouble

must lie in the brain, even if we do not have a satisfactory explanation yet.

However, post-mortems in such cases reveal nothing detectable in brain size, shape, or structure, and nothing discernible under a microscope or in a test tube This suggests a functional explanation Abnormality must result from malfunctioning. This is comparable to an automobile every part of which is sound, but which is not perfectly adjusted, with the result that it is operating below perfect efficiency.

Efforts at neurological analysis disclosed many symptoms to be incompatible with organic facts Paralyses or anesthesias occurred in regions which are not consistently under the control of particular nervous tracts. A well-known hysterical manifestation is that termed the "glove anesthesia" The patient loses all feeling in his hand, the area so affected including the region which would be covered by a glove, and breaking off as sharply at the wrist as the glove terminates. But if the proper nervous connections are traced one will see that this could not be caused by a definite organic disturbance such as cutting a main nerve. Such phenomena, then, are attributed to a mental origin.

Even more so are symptoms which do not even have physiological manifestations, such as amnesia, compulsions, hysteria, dual personality, suicidal impulses, and escape mechanisms

One's opinion of this functional versus organic argument will depend in part on his theory of the mind body problem. Just as the mind and the body are realized to be interdependent, a functional disorder can cause an organic upset and an organic disorder can cause mental changes The two may reinforce each other If one has a predisposition toward nervousness, certain body functions may be stimulated, and this in turn makes the victim even more excitable. Thus a vicious circle is established While the origin may be either functional or organic, it is hard to conceive of any serious disorder in one sphere which does not have influence on the other.

These functional mechanisms, like all forms of abnormality, are means of solving critical emotional conflicts. They have a definite purpose behind them, conscious or unconscious. This purpose is

usually some form of escape. The escape may be temporary, as fainting in an embarrassing situation, or it may be permanent, as suicide. It is rarely or never a reasonable solution. In a minor way, getting drunk only postpones solving one's difficulties, not to mention that the resultant behavior may have created new difficulties. Abnormalities or insanities, major or minor, may provide one with an escape from the troublesome situation, but the escape itself exacts the price of cutting one off from some or most social contacts.

A middle-aged widow had an only son who was about to get married. She tried to be a good sport about it, but her unconscious desires were too strong, and a few days before the wedding she developed a hysterical paralysis of the lower limbs. The son and his wife had to move in with her, to care for her, so she not only retained her son but also acquired a second person to wait on her.

Yet obviously she was handicapped in not being able to visit friends, go out to dinner, attend shows, etc., or even participate in the usual entertainments within her own home. Her unconscious mind—we wish to emphasize that this was definitely not a case of malingering: she was not faking the paralysis in any way—chose the invalidism as a better solution than the loneliness which threatened her.

Interestingly, a few months later the house caught fire while she was alone, and she walked out unaided! Again, she had not been malingering, but the unconscious this time put more premium on survival than on the invalidism.

Similarly, soldiers often develop hysterical paralyses and anesthesias, which of course incapacitate them from active duty or combat. Fear is the cause, even in the bravest of men. A competent psychiatrist could detect faking in a few minutes; one simply cannot behave consistently enough to fool an expert. When these men were removed far from the front, and more especially when hostilities were concluded, recoveries by the thousands occurred almost instantaneously.

These principles of functional disorders are all-important in abnormal psychology, psychiatry, and psychoanalysis. We shall constantly refer to them in our discussion of abnormalities of various sorts, so we urge the reader to understand the principle thoroughly before going on to the next four sections.

Typical Functional Mechanisms

One could make virtually a complete list of psychological topics and catalogue their vagaries under one form of abnormality or another. We may simplify this undertaking a little, and group the symptoms under these headings:

1. *Sensory:* hysterical blindness, deafness, or skin anesthesias. Gaps or "blind spots." Abnormal sensitivity, termed hyperesthesia. Dissociation that causes inattention and apparent absence of sensation, such as the endurance of pain in catatonia.
2. *Motor:* slow or unduly rapid activity, coordination upset, tics and repetitive acts, rigidity or waxy flexibility.
3. *Emotional:* undue sensitivity, quarrelsomeness, apathy, uncensored sexual or obscene conduct.
4. *Intellectual:* genuine deterioration in organic psychoses as paresis or senility, distractions due to inattention or emotional conflicts which may make the patient seem less intelligent in general or in dealing with special topics.
5. *Memory:* repressions, amnesia, losses from concussion or senility.

Now let us discuss a few typical functional mechanisms, with the preface that these are being given only as illustrative samples, that the list will not be complete by any means, and that we have no intention to present here a thorough treatise of psychiatry.

A. Dissociative Phenomena

Many cases follow the following typical sequence. An emotional conflict is so serious that the patient must get rid of all or part of it in order to remain even partially sane and balanced. *So some of these mental contents are literally forcibly separated from the conscious mind and repressed into the unconscious.* But in the unconscious they are not gone and forgotten; they are only temporarily forgotten and temporarily unavailable to the conscious mind. They still have influence, however, much as a closed kettle will boil over sooner or later, in keeping the patient from making a satisfactory adjustment to normal life.

While the conscious and unconscious minds have no geographical localization in neural tissue, we might observe that without the whole brain functioning properly one cannot expect to perform at full mental efficiency.

In dissociation, something is broken off. The most drastic forms of cleavage are seen in amnesias and dual personalities. In amnesia one has virtually a total loss of all personal memories for a time, usually only a few days. In any large city paper one sees mention of such a case every week or two, typically of an individual found wandering in dazed fashion, unable to remember name, address, occupation, relatives, or any other clues. Like grief, whatever conflict caused this loss of memory becomes less acute with passage of time, and spontaneous recovery, even without psychiatric aid, usually occurs within a few days.

The dual personality is very spectacular as well as relatively rare. Here the sufferer forgets his own identity and background, but creates a new one. A minister cashed a check and disappeared; months later he "came to" and found himself running a tobacco store in a city three hundred miles away. A banker whose bank failed lost his memory and was found two months later sweeping the streets of a city a thousand miles from his home. He at first denied his identity, occupation, and home residence, and even failed to recognize members of his immediate family who were summoned. In such cases rest, relaxation, and psychiatric assistance will enable recovery to occur.

A logic-tight compartment constitutes another form of dissociation, but one which is so mild that it would hardly be called abnormal. Two contradictory ideas are not allowed to come together in the mind at the same time. Major Hoople of comic-strip fame, with his bragging about his eminence in science, exploration, and military affairs, and at the same time sponging a living in his wife's boarding house constitutes a realistic example. He preserves his self-respect by narrating past exploits, but does not allow the contradictions to come together in his own mind. In the institution, a woman may insist on being called "Your Majesty" while she is on her hands and knees scrubbing the floor, or doing some other equally menial task.

B. Daydreaming and Somnambulism

Daydreaming and somnambulism are other forms of escape. Within reasonable limits daydreaming is associated with an absent-minded individual who is preoccupied with his own affairs. Carried to an extreme, one escapes reality by having very fantastic flights of the imagination, usually with himself as a hero in love, vocational, or pugilistic exploits. Obviously, a lively imagination is desirable, but it needs control and censoring. In sleepwalking or somnambulism, not the symptom but the underlying cause is a flight from an unsolved conflict. It does not occur to one of stable personality, free from serious conflict.

C. Neurasthenia

Neurasthenia means literally nervous exhaustion, or in more technical terms, a functional fatigue state.

"Literally taken, neurasthenia means of course nervous weakness; but that is not the whole story. The outstanding feature of it is fatigability. The slightest effort, or sometimes apparently the thought of exerting effort, fatigues. . . . Reactions are nervous and quick. There may be insomnia, and headache, and indigestion and other symptoms. Loss of memory [is due to] the fatigued condition [which] prevents adequate attention and so the amnesia is apparent rather than actual. . . . Emotional depression is not uncommon. Weeping is easily aroused" (*1*, p. 112).

The above quotation shows its general nature. Neurasthenia is often attributed to overwork or strain, mental, or physical. This view may be true in part, but there is a good deal of evidence against its complete acceptability. In case a person has been working hard it is probably more the worry that accompanies the work than the severity of the work itself. One may have been working extra hard because things were not going right.

Neurasthenia also occurs in persons who do not even do a normal amount of work, especially wealthy middle-aged women. They have nothing definite to do to keep them busy, so their attention turns to themselves. Worries and minor ailments are magnified, and hypochondria sets in. Cure in such cases is activity rather than rest.

Neurasthenia may result from continuing a task too long; an

example is a businessman who has taken no vacation for several years. His work begins to get on his nerves, he does not sleep or eat well, and even his normal amusements fail to interest him. A complete change is advised—a camping trip, outdoors, plenty of exercise, adequate sleep, and above all keeping away from stock tickers and daily papers.

D. Psychasthenia

Psychasthenia is presumably more mental than its physical parallel, neurasthenia, just discussed. It is characterized chiefly by compulsions, obsessions, phobias, and feelings of inadequacy. A *compulsion* is an irresistible impulse to do something—steal, set fire, or drink. The kleptomaniac steals objects he doesn't need and can well afford to buy. The pyromaniac sets fires, without even the justification of revenge or collection of insurance. An *obsession* is a constantly recurring idea, in a mild form such as a tune which keeps running through one's head, and in a more serious way a conviction which one himself acknowledges to be silly such as that a certain individual is maliciously spreading rumors about one. An act may be caused by obsession, say to touch every telephone pole one passes, never to step on a crack between paving blocks, or, of more serious consequence, to strangle someone. *Phobias* are equally groundless fears, of high or closed places, of certain animals, of crowds of people, of infection. One may go to elaborate precautions not to have a black cat cross his path, or to open every door with a clean handkerchief rather than risk infection. *Feelings of inadequacy* are evidenced not only by excessive shyness and inferiority feelings, but by excessive vacillation in making up one's mind.

E. Hysteria

Hysteria is derived from the Greek word for uterus—the disorder being so named because it was originally erroneously thought to be confined to women and to have something to do with their sex functions. We have already mentioned hysterical paralyses and anesthesias as occurring to soldiers (as well as male civilians) and as caused by emotional conflicts of various sorts. This disorder is purely functional; nothing organic of any sort enters into its causation. The personality is weakly synthesized and breakdown

occurs with less severe causation than in well-integrated individuals. One is shy, emotional, highly suggestible. Temper tantrums in the child serve to gain his goals; in the adult we would say they were hysterical symptoms. We would class similarly fits of weeping, fainting spells, or illness used to flee instead of to face a crisis. Such an illness is genuine, so far as the conscious mind of the patient is concerned, even though the unsympathetic onlooker may suspect malingering. An interesting inconsistency is seen in the phenomenon of hysterical blindness, where the patient cannot see at all for ordinary purposes but will dodge obstacles placed in his way. This is another instance of comparative motivation—say one as strong as survival itself versus escape from an unpleasant situation. Other sensory and motor malfunctions show similar inconsistencies.

F. Hypertension

Hypertension, strictly meaning high blood pressure, often has an emotional cause. It may result in excess weight, and also in arteriosclerosis or cerebral hemorrhage. The causes may be physical or mental. Psychological results are inability to relax, sleep, or concentrate for any length of time. This term, it might be remarked, has been somewhat overworked to avoid giving the patient the stigma of labeling him as having had a mental disorder. Some seem to feel that a physical ailment is out of one's control, but that a mental difficulty is to some extent his own fault.

G. Anxiety States

Anxiety states are divided into two classes, anxiety neuroses and anxiety hysteria. They accompany other disorders as a rule, rather than being separate disorders. Primary symptoms are apprehension and fear, the fears being principally of death and insanity. The patient is unable to concentrate and has tendencies toward irritability, excitement, and depression. Freud claimed that anxiety neuroses were caused by earlier sexual repressions, perhaps traceable back even to childhood, while Adler (of inferiority-complex fame) said that the sufferer has been unable to satisfy his strivings for self-assertion. But they may be due to feelings of inadequacy not only in sex, but in business affairs, marriage problems of a nonsexual nature, or constant worry about health.

Organic Psychoses

There are several disorders of a physical origin which produce characteristic mental or personality changes.

A. Senile Dementia

Senile dementia is primarily a state of mental deterioration due to cerebral atrophy. Blood supply decreases, and the brain weight itself is reduced. It may commence as early as 60, but more usually in the late 70's, and is not evident in some individuals nearing the century mark. The first signs are loss of memory, especially of recent events, which may be unnoticeable to anyone but a relative or close friend. Failure to remember recent events, sometimes of fairly important business matters, names of persons, and future dates are first seen. Next comes more drastic deterioration, where the patient may forget his children's names, how old they are, where he lives, and perhaps even his own name. Clarity of memory and reasoning vary considerably from day to day. He may be disoriented in both space and time, in this resembling the amnesia victim. He becomes irritable, especially when frustrated or when changes in life's routine occur. A serious illness in the family causes him little concern; what matters is that his meal hours are irregular or that his favorite chair is given over to the invalid. Rearrangement of furniture or even the presence of new curtains may cause a temper tantrum. A final stage is virtual vegetation—the person just sits practically motionless, doing and saying nothing.

One notices that this disorder is one principally of deterioration, except for the irritability. Sometimes, however, there are qualitative changes, such as sex attempts, often with underage girls. Delusions occasionally appear, sometimes of persecution. One grandfather in a well-to-do family, where he was excellently cared for, nevertheless thought they were trying to starve him to death, and so he would take extra food from the table to tide him over, often filling his pockets with moist foods such as mashed potatoes.

B. Alcoholism

Alcoholism is a well-known disease. It is estimated that nearly a million persons are chronic alcoholics in the United States. An

alcoholic is one who feels the need of stimulation constantly, daily or even several times a day. (One who overindulges on a Saturday or payday evening but is otherwise moderate is not considered a chronic alcohol user.) The physiological effects are tremors and other nervous phenomena, and stomach and circulatory disorders. The personality becomes quarrelsome, unreliable, untrustworthy, and while there is usually loss of sex interest there is at times unfaithfulness. Craving becomes so powerful that nothing else matters—family, job, friends, reputation, finances. The severe addict will steal or beg money, pawn his wife's jewels, or mortgage his house to obtain liquor. In advanced cases there may be genuine permanent mental deterioration, but usually this is only temporary.

Cure must start with an explanation of the cause. Prisons and medical cures are acknowledged to be virtually valueless; they merely sober up, but don't solve the conflict. Psychological or psychiatric approaches assume that the origin of alcoholism is due to personality defects which allow troubles to get him down which the well-balanced individual will take in his stride. The alcoholic usually is a high-strung and nervous individual. Whether it is a domestic worry or fear of losing one's job, alcohol is an escape and naturally not a true solution.

Alcoholics Anonymous has received a good deal of well-merited attention lately, and best available figures (admittedly not completely accurate because of the very informality and anonymity of the groups) suggest that about three fourths of its members stay cured. Prison "cures" accomplish only 1 or 2 per cent, and even psychiatric attempts along traditional lines have only about 10 to 25 per cent successes. AA starts with getting the individual to admit that he no longer has control over alcohol. Second, he must want to be cured. Previously he may have so professed, but actually his desire for alcohol was stronger than desire for job or family. He is treated sympathetically, as one who has a physical disease, not as a weak character or one with a wilful habit. A constructive and optimistic rebuilding program is started. No impossible task is set. He keeps sober for each 24 hours—a goal of a year or forever might only cause a relapse. He learns that it is more fun to be sober, to go on picnics or New Year's parties without getting drunk, that

his family's feelings and his reputation in the community are worth more than so-called good times. He finally learns that he himself cannot use alcohol, but neither he nor his organization is prohibitionist in character. He may have liquor in his house and serve his guests, but he himself uses soft drinks or coffee. He treats it as if it was an allergy, which in many ways it actually is.

C. Epilepsy

Epilepsy has about as many theories as there are specialists on the subject. A number of physical origins have been suggested, such as brain tumor or scar tissue, focal infection, glandular disorder, imbalance in body chemicals. It is apparently to some extent hereditary. The symptoms are fairly well known: the individual himself is aware of the onset by an "aura" developing, then a mild to severe convulsion occurs, with perhaps rigidity at its height, followed by gradual relaxation and recovery to normal. There is amnesia from almost the beginning of the attack until its close. The frequency of these attacks is variable, from some persons having only a few a year to the more serious cases with several a day.

To the psychologist the chief item of interest is the personality change, shown not during but between attacks. The individual is irritable, changeable in mood, stubborn, recalcitrant, and easily aroused to anger. There may be some intellectual deterioration in those who have frequent and severe attacks, although some have attributed this to head injuries from repeatedly striking objects during convulsions.

D. Traumatic Brain Injury

Traumatic brain injury, following a serious accident or the gradual result of many blows such as causes the "punch-drunk" condition of a boxer, is the direct result of cerebral damage and is usually confined to deterioration of the intellect and memory. Details of losses are too complex for us in the present treatment, so we shall not attempt to describe the exact losses which follow injuries in different cerebral areas. Naturally, in the more specific areas there are definite sensory or motor disturbances. Injury to unassigned areas may result in lowering of intelligence or gaps in memory more or less proportional to the extent of damage. There

are exceptions, however, such as that damage to the frontal lobe seems more serious than elsewhere, and injury to the left hemisphere (in right-handed people) is more serious than equal destruction in the right. Veteran boxers, who have unfortunately been ill-advised in not quitting before they have slipped so far as not to be able to protect themselves, show these symptoms: unsteady gait, clouded speech, great gaps in memory, definite intellectual deterioration, wandering of attention, and loss of perception of passage of time. One old fighter, now 50, trains daily for his comeback from a defeat of yesterday, actually 20 years ago. Generally the personality is unaffected; for instance, the punch-drunk fighter is placid and easygoing, without much ambition, rarely quarrelsome. He may never have been too bright, but now he is entirely unable to learn a gainful occupation.

Stammering

Stammering is not so serious as some of the disorders we have just discussed, although distressing to the individual himself. Like epilepsy, this has had dozens of theories advanced as to causation and cure.

The theories group themselves into three main classes. (1) Stammering is caused by faulty enunciation or breathing while speaking, and it may be corrected by instruction along these lines. (2) Nervousness or emotional conflict creates tension in the vocal cords. (3) Some chemical imbalance causes nervousness and tension.

The second theory appears to cover more facts than do the others, although, as in all topics of abnormal psychology, cases can be found to confirm or disprove any theory. Stammering is rarely cured by speaking lessons, and the writer is of the opinion that such cases as are aided have improved because the person has gained confidence in himself and accordingly is more relaxed while speaking. A purely physiological hypothesis does not explain why a person has more trouble some days than others, has trouble with different letters at different times, and is much worse in public than when reading aloud to himself or chatting with intimate friends.

An instructive observation is the fact that no one stammers while singing. The wide variations in pitch flex the muscles of

the vocal cords so much that the tension which causes the spasm does not arise. This suggests a cure which has worked with some sufferers, in having the individual speak in less of a monotone and in more musical fashion. If, however, the stammering is only an expression of nervousness, such a procedure would merely cover up the symptoms, not effect a cure.

VII. The Major Clinical Psychoses

Three major clinical abnormalities are recognized by all psychiatrists: schizophrenia or dementia praecox, manic-depressive psychosis or circular insanity, and paranoia. As with our other treatment, we cannot do complete justice to clinical forms on which entire volumes are written, so shall only touch on their major symptoms.

A. Schizophrenia or Dementia Praecox

These are alternate terms used to describe the same disorder, and mean literally "split mind" and "youthful (precocious) loss of mind." The former term is more in use now, since tabulation of ages of onset of the disorder have shown it is not quite so characteristic of early maturity as had been thought. It can originate at any age, although perhaps more cases do originate in the 20's than any other decade.

Schizophrenia has two principal symptoms. (1) *Shut-in personality,* resembling an exaggerated introversion: The individual pays little attention to his surroundings, objects or people, and may even ignore calls to meals. He appears rather glum, or, to use a popular term, is a "sourpuss." This may be more absence of cheerfulness and failure to smile than actually a bad mood, however. (2) *Emotional poverty:* As just suggested, he is inexpressive, not responding particularly to the customary pleasures and displeasures of life. Lacking these emotions, there may be a distinct cruel streak, which causes, as will be discussed in Chapter XXX, some persons with schizophrenia to be guilty of brutal crimes, torture or mutilation. Little remorse is felt afterwards, and they may even remain impassive when death sentence is passed on them.

There are four principal varieties of schizophrenia, all of which have the two elements listed above in common. (1) Dementia sim-

plex is in reality what we have just discussed. (2) Hebephrenia is the typical funny-paper insanity, characterized by fantasy and disorientation, a world of make-believe, Napoleons and reincarnated saints or saviors. (3) In catatonia there is an extreme negativism, withdrawal, and stuporousness. He pays no attention to his surroundings, even for meals or toilet, just lies or sits. The muscles may be tense, or they may have "waxy flexibility," in which latter state a limb may be moved as readily as if there were no muscles connected with it and will remain in the assigned position indefinitely. (4) The fourth type is paranoid dementia praecox, which, in addition to the two symptoms of shut-in personality and poverty of emotions, displays various types of delusions, which are described below in connection with paranoia, especially those of persecution.

These four forms of schizophrenia are not as distinct as our descriptions may sound. Psychiatrists often have difficulty in properly classifying a patient, even after weeks of observation, and furthermore the patient may slip unexpectedly from one variety into another.

No set cure can be prescribed; each case must be handled separately. The principal approach is to interest the patient in his surroundings and people. Perhaps the former is easier, as he may be more willing to engage in some material hobby, like woodworking or gardening, than in a social activity like bridge. This arousal may be difficult, as he is neither interested nor cooperative. A working activity which is of necessity cooperative, such as putting a patient on each end of a two-man crosscut saw, demands interaction, yet does not embarrass one with having to talk too much. A game like ping pong or bowling can also be played without conversation, and yet may assist in reawakening social interest.

Prognosis is not too favorable with schizophrenia. Unless the case is corrected early, while mild, there is likelihood of recurrence, usually progressively more severe and with less and less separation between attacks.

B. Manic-Depressive Psychosis

In contrast to schizophrenia, which is characterized by a poverty of emotions, the manic-depressive has too strong emotions. The patient is normal some of the time, ascends to the heights of ela-

tion only to descend without warning into the depths of despair. But there is far from a strict alternation, as suggested by a typical case, as shown in Fig. 51. There may or may not be a period of normality in the transition from one extreme to the other; the person may have two of the same extremes following one another with normality in between; and the degree of departure from the neutral zone varies.

During the manic stage the individual talks incessantly, rationally or irrationally, changes his mind frequently, is emotionally

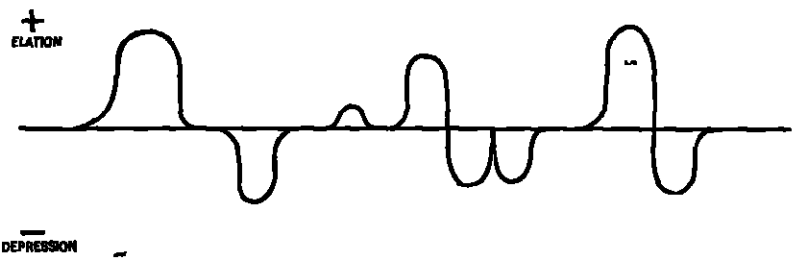

FIG. 51. Typical Cycles of Mood Alternations on the Part of a Manic-Depressive Patient. Note that alternations are not strict—that is, there may be a period of normality between two elated or depressed phases; one manic phase may follow another without intermediate depression; and the degree of fluctuation from normal may be considerable or slight.

agitated, and exhibits ceaseless movements. So violent and ceaseless are his activities that he may do himself damage through overexertion in not stopping judiciously at the beginnings of fatigue. In the depressed periods he moves and acts slowly, is horribly gloomy, may exhibit poverty of thought and psychomotor retardation. This stage is sometimes confused with schizophrenia, but the distinction is that the latter shows little emotion while the depressed patient has deep gloom. Suicidal impulses sometimes have to be combatted.

The immediate prognosis is somewhat better than for schizophrenia. The patient may have later attacks, but as a rule they are neither progressively more frequent nor more severe. The patient is more accessible for treatment, in contrast to the shut-in personality of the schizophrenic. Resolving and removing the underlying conflict constitute the principal approaches to cure.

C. Paranoia

Paranoia is characterized by systematized delusions. These occur in three general forms: reference, grandeur, and persecution.

Delusions of reference are most common. The patient assumes that all action around him has reference toward him. If two people are talking across the street, they must be whispering about him. If someone laughs, it must be at his expense.

Delusions of grandeur, as the name implies, involve false ideas of position, power, or wealth. In extreme cases the patient is so disoriented that he loses his sense of proportion and even his identity. A woman has been known to proclaim herself queen of all the civilized world at the same time she is on her hands and knees scrubbing the floor.

In *delusions of persecution* the victim feels that others, usually unknown and powerful agents, are trying to take away from him that which rightfully belongs to him. For example he should be a king or a millionaire, but a powerful conspiracy exists to deprive him of his rights. Grandeur and persecution are often combined, as this hypothetical case suggests. This abnormality may take a dangerous twist if the victim begins to fear bodily injury. He suspects friends, relatives, and strangers—even his most faithful benefactors. He may then resort to violence on the theory that he must strike the first blow for self-protection. A less dangerous although annoying form of persecutory delusion is litigious paranoia. The individual starts lawsuits on the slightest provocation every time he feels himself to be the victim of an insult. His stories are so plausible that he may fool for a time the most alert attorneys, who soon find their cases blowing up in thin air. The insults are either entirely imaginary or are in the nature of "kidding" which all of us receive, return in kind, and forget, but which the paranoiac takes unduly seriously. Religious paranoias of various sorts are well known.

Sometimes paranoia is harmless enough. The victim does no harm to others, and may not even handicap his own work. He may indulge in self-pity because others are picking on him, but if the delusions don't turn into strong persecutory ideas there is no dan

ger. There is no mental deterioration, and rarely even imbalance outside of the field of the delusions.

VIII. Principles of Psychoanalysis

Because of the popularity of psychoanalysis and because some of its theories depart considerably from other psychiatric schools, we shall make a brief survey of this viewpoint toward mental abnormality.

A. Definition

Psychoanalysis is a branch of psychiatry, and it is not, as is sometimes believed, something mysterious or esoteric. It has a common purpose with other forms of psychiatry, the study, explanation, and cure of functional disorders. It is set apart from other psychiatries in its insistence on the potency of certain instinctive forces which when thwarted or repressed, cause abnormality, and in its methods of discovering the source and in curing the disorder.

B. Mechanisms

The fundamental concept of psychoanalysis is that abnormality is caused by repressing into the unconscious certain experiences or drives which are too painful to be kept in consciousness. After the material has been forced into the unconscious it does not die out passively like ordinary memories which fade away with time. Rather it remains potent even though it is no longer accessible to the individual's normal consciousness. It is kept from returning to consciousness by a mechanism called the censor.

This censor serves the same general functions as the agency in a war which keeps information from leaking out to the enemy. In this case it keeps unpleasant material from returning to the patient's waking consciousness. In spite of this the emotional tone is too strong for a complete repression to take place. The mental contents are like a kettle of boiling water over which one has placed the lid to prevent the steam from escaping; the remedy is only temporary. Sooner or later there will be a blowoff. This blowoff will occur in a direction different from that of the original

force. The censor operates in such a way that the original contents cannot return. What does return is disguised. The pressure is released, yet peace of mind is retained. The direction this indirect expression will take is unpredictable. Among possible symptoms are amnesias, multiple personalities, hysterias, paralyses, invalidism, automatisms, neuroses, anesthesias.

Sources of Disorder

The sources of disorder is one of the keenest bones of contention among psychoanalysts. In contrast to psychiatrists, who usually subscribe to no special system, most analysts have their own individual preconceptions. Freud, famous founder of psychoanalysis, felt that sex was responsible for almost every single maladjustment. Others attribute neuroses to inferiority feelings, birth trauma, dissociations, and other strong thwarted desires.

These claims are difficult to evaluate, since cases can be cited to support each, yet summarized statistics are unavailable. Further, it has been claimed that many analysts trace back into a patient's life until they find a conflict along their pet lines, and stop there, assuming they have reached a solution. Does not everyone have some conflict over sex, or health, or security (inferiority) in his past?

Diagnosis

Since abnormalities are due to emotional conflicts, they must be gotten rid of by removing the emotions. How can this be accomplished? In daily life we try to reason them out with ourselves on a rational plane. This failing, we talk with a parent, a friend, a doctor, a minister, or some other respected individual, telling him our troubles and asking his advice and sympathy. The other person can usually see our problems in less emotional fashion and in proportion to their true merit. Just getting it "off our chest" in this fashion is usually a great help. The Catholic confessional can be an aid in simple cases, with the advantages of the confessor knowing that the priest will keep the incident confidential and also that his advice is probably founded upon handling many such cases. Even though the purposes are theological and social, the values are practical and individual.

However, if there has been repression into the unconscious,

psychiatric or psychoanalytic aid may be necessary. The problem is one of evading the censor and returning the material into the conscious mind. There are several methods of doing this:

1. *Discussion* with the patient will work only in mild cases.

2. *Hypnosis* was tried in the early days but has been largely discarded. Not all patients are amenable to deep hypnosis, not all analysts make good operators, and material obtained in the hypnotic state may not be available later to normal consciousness.

3. *Psychoanalysis*, the term applied to the whole school, was originally applied to its method. Typically, the patient sits or reclines comfortably and is asked just to talk, to tell all he thinks of about himself and his past history. The analyst pays special attention to any hesitations, gaps, or unfinished statements, which suggest blocks from conflicts. If a number touch on the same subject, say sex or illness, a clue for further diagnosis has been suggested. This process, as one might guess, takes several months, or even a year or two, because significant information comes out very slowly.

4. *Association* is used by adherents of one school of thought. A word list is prepared, of perhaps one hundred items, which are presented one at a time to the subject. He is instructed to reply with the first word that comes into his mind after the stimulus word is given him. Records are kept of response, time, and any indication of emotional distress. Many stimulus words are used just for fillers, such as table, river, cabbage. Others aim at possible presence of complexes, such as girl, baby, bed, priest, hospital, infection, bankrupt, discharge, which refer to possible sex, family, illness, ego, or business troubles.

This method is obviously much speedier than that of personal analysis, but some contend that such direct attack on an emotion may only serve to put the censor more on guard and thus delay diagnosis and ultimate recovery. We cannot take sides, as there are no statistics available as to percentage of cures achieved by either method. But patients are undeniably cured by each technique.

5. *Slips of the tongue, pen, and mental errors:* Freud and several other writers stress the importance of errors in thought processes as indicative of something underlying rather than being purely chance. They represent repressed wishes which are so strong

that they force their way into action, directly or indirectly. A man who forgets his wife's birthday is showing that he no longer loves her as he once did. If one forgets to mail a letter, it is because its contents are unpleasant—asking an undesired relative to come for a long visit, mailing a check for something one wishes he had not purchased, sending bad news. Again, we have no basis for evaluating these claims, but if they furnish a clue which leads to the cure of some cases they represent a lead which should be followed.

6. *Dreams* have also been used by Freud and others. Previously they had been thought of as purely random, but this school claims they have as much cause and effect behind their operations as any other mental contents. During sleep the censor is not quite so alert as while one is awake, and some repressed contents escape back from the unconscious and appear in the dream content.

This material, however, is not directly expressed. Freud makes a distinction between the manifest and latent contents of the dream. The manifest content is the way the dream actually appears to the dreamer, the way it would be if it were possible to photograph the images as they come and go. The latent content is the underlying meaning of the dream. (This is similar to *Gulliver's Travels,* which superficially appears to be a rather fantastic travel story for children's amusement, but actually is a disguised political satire ridiculing leaders of the day.) The two are different because of the censor, which while it lets some material escape does not permit it to emerge in its true form. The form in which it does escape suggests the real meaning when it is translated.

Certain standard symbols represent common experiences and objects. Many center around male and female sex organs, sex functions and activities, and perversions. A large variety of acts symbolize desire for sexual relations. Climbing a staircase is a typical example; this symbol is easily understood when one considers the term "mounting" used by animal breeders. Turning right or left has ethical significance, right being the correct and left the illegal or immoral. This double meaning, existing in most European languages, is taken as a disguised and rather far-fetched symbol. Dreaming that someone has died or met with misfortune is a very thinly covered up wish fulfillment, as is rejoicing at a

funeral, even if the dreamer feels grief or shame in his conscious mind.

Not only does this partial escape through the censor permit the dream to give a clue to the underlying cause of the trouble, but the patient is less inhibited about narrating it. The writer heard a college girl state positively that she never had any sex dreams, but that she did have one very troublesome recurrent dream. A man chased her with an unraised dagger, and in trying to escape she kept falling down. The Freudian interpretation is very obvious. The dagger stands for the male sexual organ. She ran away, a guise to satisfy her conscience, yet she fell down, not once but repeatedly, which prevented her from escaping. In other words, she wished to be caught, but the disguise permitted her to save her conscience and also to tell the dream.

Cure

Each case is individual and needs unique treatment, so cures as general as those on a medical level cannot be promulgated. In psychoanalysis, however, the principal step in achieving the cure is to have the patient relive the emotion (called abreaction by Freud), which should help purge it and put the original incident on more of a rational plane. With this, the conflict should disappear and the patient return to normal. In some cases this may be immediate, but there is usually an upbuilding period after diagnosis. The writer once helped a young man of 24, who was afraid to leave home and who was obsessed that everyone was staring at him and seeing his "shame." His cure commenced almost immediately after the original cause, a "horror" sex lecture, was unearthed and explanation given that he had experienced nothing more than any other normal adolescent. His shoulders lifted as if he had rid himself of a heavy knapsack. His restoration to normal social living took several months, since the unconscious is not instantly abolished, but it was clear that a start had been made once the original incident and causes were diagnosed and exposed. It takes time to recover from an emotional shock and to recover poise and confidence.

It must be admitted that bringing the material back to the conscious mind does not invariably work. In some cases both patient

and psychiatrist are convinced that the true cause has been found, yet the patient does not recover. Further, there may be relapses. Another shock as strong as that which caused the first breakdown may produce another. So psychiatrists or psychoanalysts have been accused by their adversaries of only temporarily curing symptoms, and not giving patients a permanent readjustment.

Psychology in Health and Illness

Oftentimes people become sick or are cured through purely psychological mechanisms, with no trace of the organic in the picture.

A. Suggestion

Suggestion is very broad and general. It may be defined as a technique of influencing someone to do something without issuing a definite order or indicating directly that one desires him to behave that way. The father who wishes to get rid of a noisy child and does so by observing with apparent casualness that a fire engine is coming up the street is using indirect suggestion, and usually obtains better results than if he tells him to go outside to play. One may obtain a far better bargain if he mentions that he is considering spending part of the summer at Long Lake than if he announces flatly that he is in the market for a cottage there.

Going into detail with a sick person over his condition may serve to redouble his morbidity. It is better to encourage him subtly and indirectly by showing more by expression and action than by word that he is coming along very satisfactorily. A doctor may have better success in persuading a man to have diseased tonsils removed by gentle hints from time to time, and mentioning parallel cases which resulted in serious impairment of health from neglect, than from undertaking one big debate.

B. Attitude of the Patient

The attitude of the patient is tied up definitely with suggestion, and a phase of it known as autosuggestion. As with any form of motivation, the patient must take up the idea himself before it can do any good; so long as it exists only in the doctor's or family's

mind it will remain ineffective. The motto made popular two decades ago by a Frenchman, Coué, "Day by day in every way I am growing better and better," is a vivid expression of this concept. Such complete self-confidence is basically emotional, and the extreme of this is seen in the faith cures achieved in a number of shrines in this country and abroad. Whatever the true explanation, real cures are effected. Without accepting a supernatural causation, one would conclude that the victim has been ill, has recovered organically, but has inflicted a self-imposed invalidism on himself. The desire to be well, plus the blind confidence in the certainty of miraculous cure, persuades the individual to get out of his wheelchair or discard his crutches. How many of these cases may have had later relapses from overstraining weakened heart or leg muscles we have no way of knowing, but it is certain that over-enthusiasm may give strength temporarily and unwisely.

The "will to live" is spoken of by many medical men and psychiatrists. A patient who is seriously ill has far greater chances for recovery if he is optimistic, really wants to live, and is fighting for that chance than if he has become discouraged and thinks he is doomed. Even in minor ailments the rate of recovery is partially determined by desire to return to normal life. It takes a truly severe illness to keep a college girl from a date to a formal dance, but a minor cold may undermine her strength so seriously that taking an examination is out of the question.

Often the doctor has more trouble with the family than with the sufferer himself. The doctor may be able to create a little more optimism than is really justified, but he cannot control the patient's family so well. Irreparable damage has been done by a relative who breaks into hysterics at the bedside. The writer has seen relatives of a man critically ill with a brain tumor remark upon leaving, "Well, Tom, hope you get well." The visitor must be properly cautioned and perhaps even excluded. The attitude and strength of the patient must be considered, not the feelings of the visitor.

C. Bedside Manner of the Physician

Bedside manner is a point upon which young doctors are often advised as they start practice. The medical profession has expended a good deal of effort in building up and surrounding itself with

mystery and omniscience to gain prestige. A doctor says "anterior poliomyelitis" or "coryza" when he could just as easily have said "infantile paralysis" or "common cold," but in so doing he impresses the patient and his family. The writer has no intention of disparaging doctors and their fine work, but there is no denying that they have achieved a reputation for knowledge far beyond the limits of their professional education. This may be a distinct asset, the patient feeling "if he knows that much, he can't help but cure me." The more learned and abstruse the specialist, or the greater the distance he has come (and the greater the fee he has charged), the more good he will do. Writing prescriptions from memory, and in alchemic symbols, is impressive, but perhaps sometimes less accurate than copying from a standard pharmacopoeia.

Sugar-coated pills containing no medicine whatever are stock means used by all doctors to speed up the cure of neurotic patients. Usually rest and time are more important than any drugs, but the patient hates to pay for hearing so. He wants action, and action means pills or syrups of some sort. The syrup may be horrid tasting, on the theory that many feel that the worse tasting the better it must be for them. The value of these methods is in proportion to the potency of suggestion and confidence on the part of the patient.

Treat the Patient as a Person

Since an illness may be started, or helped along, by mental and emotional phenomena, it is apparent that cure will have to follow the same lines. The doctor must study the patient's personality as much as he studies his organic symptoms. A man once described a certain doctor in these terms, "I don't care for him. He doesn't treat me as a person. A month ago I had an infected toe, necessitating daily visits for about a week. The other day I went in to see him about something else, and I was a stranger to him. Thinking back, I'm sure all he saw was a toe coming into his office, not a whole human."

Many doctors are frank in accordance with the patient's intelligence and stability, describing to some in detail the nature of the malady, feeling that such a patient will do better if he understands

the whole syndrome. But a less intelligent and neurotic individual will be handled better with suggestion and sugar-coated pills.

D. Reeducation

Reeducation is necessary after some types of illness to prevent invalidism. In some cases physical training is called for, in others emotional rehabilitation. Franz (*4*) did some very valuable and interesting work on the paralyses and aphasias which result from cerebral injury or hemorrhage. He thoroughly decried the practice of making an invalid out of a person so afflicted—pulling down the shades, talking in whispers, and not letting him do anything for himself. Franz did his first research on monkeys, studying the effects of cerebral operations. If one side of the body were paralyzed, no spontaneous recovery took place, but if the good arm and leg were bound up it was forced to use the injured members. Recovery then occurred. This same principle was then applied to humans with much success. It is essential that this treatment begin immediately. It may sound brutal to force the patient to exert himself right after his injury, but it is more effective in the long run and so is really a favor to him. It is likely that rehabilitation following infantile paralysis should follow the same principle, before the unused muscles begin to atrophy.

2. Psychological Considerations in Dentistry

A. Treat the Whole Patient

It is the person that is ailing, not merely the tooth. Each person is different, so treat him as a unique being with an individual problem.

B. Be Obliging About Appointments

The medical doctor recognizes his obligation to be on tap 24 hours a day, but the dentist by custom restricts himself to business hours. Yet there is from a standpoint of acute distress, if not actual survival, more of an emergency with a raging toothache than in a stomach ache or attack of flu. The writer knew a dentist who had to discharge his assistant because she was so unobliging about emergency appointments that gradually his regular clientele drifted

to other dentists. The climax was reached when a regular patient who had four teeth broken off in an accident with the bare nerves exposed was told he couldn't be treated for ten days!

C. Minimizing Pain

Minimizing pain is recognized by all of us as probably the most important problem in dentistry. Because of the actual and imagined pain, and the unpleasant vibration of the drill, it is safe to say that each year millions of teeth are neglected into such a state of decay that they have to be extracted. Painless dentistry just hasn't been achieved yet, many have unpleasant aftereffects from novocaine, and minimizing pain may be at the expense of a superficial cleaning job with subsequent recurrence of decay.

Psychologically, the expectation of pain is worse than the actual suffering, yet tension is cumulative. For this reason half-hour sessions might be recommended for the more nervous patient. Rest between drillings, used for other preparations, can let the patient relax briefly.

The personality of the patient should be studied in this connection. Some will prefer to have the painful part concentrated and get it over with in one large dose, while others have to be carried along and babied. With one patient, telling him the next drilling will hurt is the best tactic, while another might experience redoubled pain if so informed.

D. Selling Oneself

Like any other professional man the dentist must be a salesman as well as a competent workman. People asked to tell why they preferred and disliked, respectively, various dentists (2) mentioned primarily social qualities and qualities in work which were really evidence of personality traits; such as cleanliness of white jacket, smoking in the midst of the session, or pulling teeth rather than bothering to fill them. The good dentists were cheerful and friendly, went at their work with confidence, were gentle in their work, kept themselves and their offices scrupulously neat, and were honest about the work which was necessary and about their fees. These, the investigator pointed out, were not logical reasons about the dentist's technical skill, but represented emotional reactions of

the patient toward him. Good work was recognized, undeniably, but alone it did not suffice. In addition to his handling of patients, he will, like the lawyer or medical man, find it helpful to take part in community affairs, and to be as well known and liked personally as possible.

XI. Psychology in Nursing

Since the mind is so inseparably bound up with the body, the nurse will need both theoretical and practical knowledge of psychology. In fact almost all nursing schools require at least one course. In addition, courses or readings on personality, mental hygiene, abnormal psychology, physiological psychology, individual differences, and social psychology cannot but help in the nurse's success in her profession.

Like the doctor or the dentist, the nurse is treating the whole patient, who has become ailing in his emotions and outlooks as well as in one or more organs. His morale is precarious, and he may have become irritable, as well as hypochondriacal. If one is seeking a descriptive term, he might say that the patient's personality is temporarily changed as a result of his illness. The nurse should anticipate that the ill respond differently to noises and odors, get special likes or dislikes for foods, have different effects from medicines administered, respond differently to weather and temperature changes, and are especially susceptible to annoyances toward people and environmental conditions.

Morale factors of the patient are important. It is difficult to sustain morale throughout a lengthy illness and convalescence; the subject tends to become discouraged at times because of slow progress, and while convalescent he will chafe at restraints still necessary. He is like a little child in wanting constant attention and in being irritated at being crossed in any respect, yet he will often have to be denied visitors, certain foods or sweets, or be restrained in bed. Doctors claim they can spot the turning point in a woman's illness, when she wants her comb and lipstick, and a bed jacket more attractive than a hospital gown. Morale has returned!

A private nurse in the household of a patient at home has a very practical test of her knowledge and application of psychology.

She has not only to get along with the patient, but has relatives around her all hours of the day and has to adapt to the customs of a strange household. Yet at the same time she has to practice her profession and maintain the discipline necessary to facilitate the patient's recovery. In fact, these difficulties give the very reason a doctor often prefers a patient to go to a hospital. Family and relatives may undo all the good that doctors and nurses can do.

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CHAPTER XXIX

PSYCHOLOGY IN LAW
I: CRIMINALITY

I. The Role of Law in Social Behavior

Law must exist in any society so that the maximum degree of freedom and protection can accrue to each one of us. Once population became crowded enough and society interdependent enough, compromise was necessary. And since everyone is far from altruistic enough to give as much as he wishes to take, regulation is essential. Laws have been drawn up to protect people from violence on the part of others, to protect their property, to regulate business relationships, to support governmental functions, to protect employees and investors, and to govern traffic. Along with this is the establishment of penalties for violations.

We will all concede that human behavior is so complex that all contingencies of action cannot be anticipated, even though such was attempted in the many-volume Napoleonic Code, incidentally the basis of the law of the State of Louisiana. Few cases, in any legal system, conform to the exact wording of existing law. Even though the law may be definite enough, as in patent or copyright infringement or murder, the facts of a particular case are usually in dispute. Does the name or design of carton of a new toothpaste or coffee indicate obvious imitation and effort to capitalize on another's reputation? Did the suspect actually kill the victim? If so, was it premeditated, done in the heat of passion, a matter of negligence, or a mere accident? In other words, what was the motive, the intent? Was the witness in a position to see or hear accurately, and expert enough to interpret correctly? Such prob-

lems, then, are questions of fact and judgment, up to the judge and jury to decide on the basis of all the testimony presented.

Some of the problems of law in which psychological questions arise are: nature of the criminal, prevention of criminality, accuracy of observation and memory in relation to evidence, character evidence, mental condition, detection of guilt through various behavior measures, presentation of the case, legal responsibility, theory and practice of punishment.

Actually, practically every topic in psychology can have legal significance, and one text entitled *Legal Psychology* is virtually a general psychology with each topic directed toward legal applications. The basic broad purpose of our field—to predict and control human behavior—is the purpose likewise of law in its various phases. The following outline of major psychological topics and their legal implications demonstrates this point (3).

Motivation: Why was the act done? Was it coldly planned (e.g., first-degree murder), or in anger, due to negligence, etc.? Effects of various punishments on others' conduct.

Sensation and perception: Discrimination and memory of what has been seen or heard, judgment of direction and distance, errors and illusions.

Learning and memory: Experience and opportunities for witness to learn, memory after certain lapses of time and under certain conditions.

Physiological psychology: Drug effects, effects of disease on mental processes and behavior, brain injuries, emotional and visceral reactions as indicative of guilt.

Emotions: Influence on memory and testimony, behavior under excitement or rage.

Intelligence: Bearing on delinquency and criminality, credibility of witnesses, legal responsibility, marriage restrictions for those of below-par mentality.

Thinking: Testimony, suggestion, judgment under various conditions, freedom of will.

Personality: Delinquency, honesty, intent, emotionality, stability.

Social psychology: Group differences in criminal tendency: race, religion, occupation, residence. Mass hysteria and other group phenomena.

Abnormal psychology: Predisposition toward criminality, responsibility for acts done, likelihood of repetition, recovery and future behavior.

In fairness we must point out that a number of fields of law do not have such direct psychological bearings. Much of the regula-

tion of behavior through law is in highly technical ways. Examples are contracts and wills, sales of property, bankruptcy proceedings, taxation. Most of the more directly psychological topics deal with criminality and court procedure. These are inherently spectacular, and may give a false impression of a typical lawyer's daily routine. Many lawyers never or seldom appear in court or handle (in movie fashion) murder trials. The great majority of their time is taken up in their own office, quietly handling technical problems of non-controversial nature.

It might be remarked also that the psychology quoted by lawyers and judges is often not in accord with the most recent and most scientific views currently held by professional psychologists. Principles may appeal to common sense ("everyone knows that . . .") when that so-called common sense has long since been demonstrated to be false. Other principles may have been accepted as correct years ago, but since have been modified or superseded. Judges and authors of legal tomes may cite opinions on the part of learned judges in the distant past, but in doing so may be perpetuating errors. We must not be too harsh in these statements, however, as we recognize it is difficult enough for anyone to keep up in his own field without imposing the added duty of keeping up to the minute in related fields. The psychologist may be equally dilatory in applying newly discovered principles of nervous activity or of glandular physiology.

Of somewhat different nature is the existence of certain systematic differences, in which neither side can be said to be right or wrong. Law is founded on a doctrine of free will, which is no longer held by psychologists. Accordingly, the insane criminal who is decreed not punishable because he did not choose voluntarily and deliberately to do his misdeed would rather be said by the psychologist to be more likely to repeat the deed in the future and hence should be more rather than less subject to removal from society for purposes of protecting that society. A law professor, writing on this subject (*19*, p. 2) states: "That the 'tests' which courts apply today in determining whether or not a defendant is sane enough to be held responsible for his misdeeds, conflict with, or at least are not applied in the light of, modern psychological and psychiatric knowledge, is a charge upon which lawyers are not

qualified to dispute. Indeed, it is one which even a cursory study of the modern scientific concept of mental disorder will force them to admit as true."

Of similar obvious invalidity are tests of whether a child is mentally advanced enough to give reliable testimony, or whether an adult suspected of feeble-mindedness can give testimony or be held guilty on the basis of "free will." Tests used in courts and specified by law in many states are, to say the least, inadequate and at variance with tests used by psychologists to place mental ages —which latter of course have been derived on the basis of tens of thousands of experimental cases, not rule-of-thumb procedures. Responsibility of a child, by the way, is usually specified by law on the basis of chronological rather than mental age, whereas the psychologist would urge the reverse.

II. The Law as a Regulator of Human Behavior

Let us cite a few examples to show how our daily lives are affected by ordinances which have been drawn up to allow the maximum number of persons to have the greatest amount of freedom.

Traffic regulations constitute an ever-present example. By means of stop signs and traffic lights we are forced to proceed in accordance with definite regulations. We must recognize that they have a positive as well as negative influence. We may proceed along an arterial highway at a fair rate of speed with confidence that no one will dart out from a side street and hit us. While it may be annoying to have to stop when debouching from a side street, one more than makes up for this lost time after he has come into the thoroughfare. Actually, a higher average speed can be maintained with well-planned signals than if there were no regulations, not to mention less confusion and tension, and fewer accidents.

Rights of patent and copyright enable one to embark on large-scale business operations without fear of loss of a heavy investment. When a man has spent a great deal of effort and imagination to perfect a new device or process it would be very discouraging if everyone could profit equally from it. Business would be conducted far differently if there were no protection of such priority.

An injunction can be issued if it is suspected that a certain individual is considering unfair practices which may interfere with one's normal business or private life. Injunctions have been sworn out to prevent labor leaders from actively persuading workers to strike, sellers from engaging in competing business in violation of joint agreement (when one buys a store he usually has the seller sign an agreement not to engage in that business in that community for a certain number of years), and prospective entrepreneurs from starting a certain type of business, such as poultry farm or bowling alley, in a residential district. While the main function of an injunction is to deter a specified mode of conduct, its potential use is to permit a man to conduct his business or to build his house in a normal, trusting, and confident way, knowing that legal machinery exists by which distinctly unfair practices can be restrained. Thus this phase of law serves in a sense as a means of predicting and regulating future behavior.

Partnerships and other contracts regulate behavior in another way. For maximum overall fairness it is necessary that certain situations be anticipated and ways of settling them be prescribed in advance. One who may be tempted to cheat his partner is deterred by the specifications of the contract and by penalties attached to violations. Certain other contracts, such as life insurance, determine one's actions over a long period of time.

Control of future behavior of others is the purpose of a will. In case a person dies without leaving a will, the law provides just how various relatives shall share in the estate, but it is seldom that one wishes exactly that disposition to be made. He has certain nonrelatives whom he wishes to favor, certain relatives have meant more to him than others of equally close rank, and there are possibly certain ones whom he would prefer not to share in the fruits of his life's work.

III. Who Is the Criminal?

Is there a definite criminal type? Does the criminal possess any special traits not characteristic of noncriminals, or to a greater or lesser degree than noncriminals? In a way this is a question parallel to that of personality types in general, and we recall that that question is usually answered in the negative. There is no salesman type,

or typical businessman, doctor, or lawyer. Whatever variations there are exist in degree only, and not in kind.

A. The Criminal Type

The criminal type, as a suggested classification, was originated by Galton, the British scientist of three quarters of a century ago (7). He made an interesting approach through "composite portraiture," exposing onto one photographic plate the faces of a number of murderers, on another several thieves, etc. The two portraits do differ—the men guilty of violent crimes have large, square, heavy faces, while those convicted of burglary are the type we term "rat-faced." However, since Galton had only eight and four cases, respectively, it is doubtful that the trend is general.

Lombroso, an Italian anthropologist, tried to correlate criminality with anthropometry. He got his start when he noticed that sailors who were tattooed, particularly when the designs were indecent, caused more trouble than their mates who were more conservative in bodily decoration. We can readily see that getting oneself tattooed may be an expression of personality, but it is not truly a physical characteristic as is a birthmark, or more especially shape of skull or face. Lombroso claimed that the criminal was a throwback, an individual with certain animal characteristics, such as prominent lower jaw, high-pointed crown, prominent ridges above the eyes, large ears, woolly hair, etc. But this doctrine breaks down when large numbers of cases are studied, as invariably with any similar phrenological attempt. Very handsome criminals are found, and many worthy citizens have those traits mentioned above.

Thus it becomes evident that positive findings, if any, must come from behavior—intelligence, personality traits, emotional balance, environmental influences—rather than structure.

B. Intelligence

As to the bare facts, there is no denying that convicted criminals do average in intelligence below the median of the population. But, as we well know, correlation does not prove direct causation. Let us name several complicating factors. (1) We are dealing with criminals who are caught, suggesting below average, like studying bank-

rupt store owners. (2) High-class criminals are either not caught or can afford high-priced legal talent to assist them to escape punishment, or they may have acted so cleverly that while they may have violated principles of ethical conduct they may not be legally culpable. (3) Their intelligence scores may not be really accurate (we have previously discussed adult IQ's), as most criminals have had scanty education and even when legitimately employed have in the main worked at unstimulating vocations. Such criminals should be compared to equivalent noncriminals, paired as to education, normal occupation if any, and quality of past and present environment.

There may be two cause-and-effect relationships, both one step removed. The moron or dull normal suffers in competitive society, so has trouble, if not in earning a bare living, at least in keeping up with his neighbors in car, entertainment, clothes, and other luxury items. Hence petty thievery and car-stealing are resorted to by the man, and prostitution by the woman. This does appear to be a partially valid explanation, as when intelligence scores are presented according to crime committed, thieves are among the lowest. *But the low intelligence itself is not a direct causative factor in the genesis of criminality.*

Another theory is that with low intelligence one cannot differentiate between right and wrong, but this is far from satisfactory —to be so abysmally stupid one would have to be even below the moron level, and few criminals are.

Another rebuttal is the fact that only a fraction of those of any intelligence level become legally involved. Perhaps the numbers of those lower in mentality are somewhat greater than of average or superior, but there is no compelling factor toward or away from criminality at any level. One may speak only of slightly greater or *slightly lesser tendencies.*

Mothers guilty of abandonment of children were found to have a disproportionate representation among the feeble-minded, but this again may be economic—an additional child can't be supported with their limited resources.

Illegitimacy is about the only crime that can be said to be more or less directly produced by lower intelligence. While there is no evidence that immorality is any other than normally distributed,

it seems that those who suffer unfortunate results are inclined to be among those with lesser intellect.

Studies on recidivism (repeated convictions) do not completely agree with each other, although most of them show only slightly lower average intelligence scores for repeaters. However, as it has been pointed out, if low intelligence had a direct causal relationship with criminality, repeaters should be decidedly lower than single offenders. Thus again we see that low intelligence is only a contributing, rather than a direct, factor in causation (*16*).

C. Heredity

Heredity was formerly blamed for all sorts of evils. We now realize that most traits which are common to a number of members of a family are more likely acquired through environmental contact than handed down through the germ plasm.

The history of the famous Kallikak family has been cited countless times to prove the contentions of both hereditarians and environmentalists. For readers who are not familiar with this dramatic study (*9*), we shall sum it up in a few sentences. During the Revolutionary War a soldier consorted with a feeble-minded barmaid, and from this union there has descended a family line rife with degeneracy, feeble-mindedness, criminality, alcoholism, and prostitution. At least two thirds of the descendants of this line appear to have been deficient in one or more ways, although granted most of the evidence was hearsay. After the war this soldier married a normal girl, and that line includes reputable and successful citizens in various occupations, and practically none abnormal in any respect. The original investigator attributed this wide difference entirely to heredity, but nowadays we lean toward the environmental slant.

Another argument concerning heredity is that it operates, where it does, in very specific ways; and if criminality were to be inherited, we might expect the type of crime committed—stealing, swindling, assault—as well as criminality in general, to be passed from parents to offspring. Yet the evidence merely shows the presence of antisocial conduct throughout various members of a family. Adopted children have been studied in other respects, and the writer would venture to predict that one reared in a family rife

with criminality would be as likely to succumb himself as would an "own" child, and conversely that a child of criminals, adopted in infancy into a respectable family, would almost certainly grow up respectable himself.

D. Environment

If one is brought up in surroundings which have lawbreaking as daily features, where little premium is placed on education or increasing one's competence along socially approved lines, and where amusements are of a destructive rather than a healthy sort, criminality is likely to ensue. All the various environmental influences which may cause criminal tendencies are too numerous to discuss here, so we shall content ourselves with a few typical instances.

Let us refer again to the Kallikak family. The first of the unfavorable line, being illegitimate and undoubtedly well below par mentally, would be forced to associate with his equals in intellectual, social, and economic status. His children would have scanty opportunity to do other than likewise. So the condition tends to perpetuate itself.

In large cities it has been found that certain areas contribute far greater proportions of delinquents than do other districts. Shaw (*17*) has made a very intensive study from juvenile-court records of what he terms "delinquency areas" in Chicago. It was observed early that cases did not come equally from all sections of the city, but that some neighborhoods contributed far more than their expected share of delinquents. Other neighborhoods were relatively free from trouble. There were found to be three main high-delinquency areas, the Loop district, the steel-mill region on the south side, and the slaughterhouse neighborhood. Nearly 30 per cent of children from the Loop have court records, 15 per cent from somewhat farther out, and only 1 to 2 per cent from the better suburbs. While it is true that the material resources of the families are somewhat greater in the more choice residential districts, the wideness of the differences can only be accounted for on the basis of unfavorable domestic and neighborhood environments.

One of the most important of environmental factors is the influence of gangs on juvenile delinquency. These gangs may be

either juvenile or adult. The juvenile gangs usually have older boys as leaders, and the younger members are forced to do the routine work and are often the ones who get caught. Adult gangs often make deliberate use of boys, who can spy and do errands for them with less danger of arousing suspicion. Dope rings commonly make use of this practice. Naturally the boys become more and more immersed in crime themselves, so the borderline cases gradually become hardened criminals.

Several studies which have been made on newsboys have shown that their environment is especially conducive to delinquency. The following incident was related by a college student, who had been a newsboy at the age of 13 with a post near the railroad station (20). Frequently men approached him with regard to obtaining liquor or women. He would turn such business over to a certain taxi driver, who in return would call him when a passenger wanted a paper. One day, after such an inquiry, the driver returned and regaled him with all the lurid details of how he had gotten a woman for his customer and driven them out into the country, where the two of them had held up the passenger and forced him out of the cab, after which the driver had taken advantage of the situation with the prostitute. His casual, in fact boastful, tale greatly upset this impressionable boy of 13, as one might readily imagine.

Word associations of newsboys have been found to resemble very closely those of juvenile delinquents. Presumably by being on the streets they acquire the language of the "gutter." While we no longer swallow the old saw that the boy who steals pennies from his mother's purse or apples from a peddler's cart will end up by being hanged for murder, we do realize that unfavorable influences increase by that much the chances for an antisocial career.

Broken homes contribute much more than their expected share of delinquency. By a broken home we mean one in which both parents are not living and in a normal happy relationship; it includes those where one is deceased or where a separation or divorce has occurred. To get the best rearing, a child needs the contributing influence of both parents and a home to which he likes to come. If it is unhappy or unpleasant, he will spend as little time as necessary in it. Then, where will he go? What influences will replace

those normally found in the good home? One of course may ask what one can do about a broken home. Death cannot be avoided, and an intolerable situation may make divorce imperative. Is it just tough luck, then, for those children who happen to have been born into a home which later becomes disrupted? But as with many situations, forewarned is forearmed. The remaining parent should realize that death doubles the chances of delinquency, and separation or divorce approximately quadruples it, and take special pains to make the home as happy and complete as possible.

Added to physically broken homes are those which have been termed "psychologically broken," in which one parent is irresponsible, shiftless, a social gadfly, alcoholic, wealthy to the point where children are brought up by governesses rather than parents, or where there is constant dissension, bickering, loss of temper. These factors can only have unfavorable repercussions on the emotional development of the child. The *way* things are said and done is far more important than *what*. Parental thoughtfulness and companionship is a far better influence than all the expensive mansions, summer camps, fashionable boarding schools, and other material resources. These latter factors, we must hasten to add, create problems other than those of the common criminal, but can lead to certain forms of delinquency.

It should be clearly understood that these and other conditions do not necessitate a criminal career. Far from it. Rather it means that unfavorable surroundings increase the probability of the boy or girl falling into bad ways. By far the majority of people lead an honest life, even when they do come from the worst city slums and do have relatives and associates of the worst order. Likewise, habitual miscreants occasionally spring from families of the most excellent background and environmental status. We must emphasize that we are dealing with probabilities and percentages, not certainties. No single or even half dozen causes can be laid down to account for all criminality. Like mental and physical ailments, each case must be diagnosed and treated by itself.

E. Personality

Countless studies have dealt with the personality of the criminal or of a particular lawbreaker. Some of these take a psychological

or sociological approach, others make psychiatric and even psychoanalytic diagnoses. In a few instances personality tests have been used in an attempt to measure possible differences between delinquents and others. On the Bernreuter test what were described as "mentally superior prison inmates" (*4*) showed lack of stability and lack of self-confidence, but there was no material difference in aggressiveness from normals (probably meaning the college group upon which the test was originally standardized).

In an attitude questionnaire 316 delinquents indicated (*6*): ". . . (1) that of things considered wrong, undesirable social traits, such as being conceited, were of negative concern; (2) that emphasis on items of worry, such as sins, seemed to indicate the presence of a pronounced morbid strain; (3) that interests were mostly of a relatively superficial nature, such as circus; and (4) that reactions to kinds of people admired indicated egocentricity on the part of delinquents." The investigator then selected items which differentiated, and developed from these a new scale to predict delinquency. He did admit, however, that institutionalization may have produced some of the differences between the two groups and that the delinquents prior to commitment might not have shown some of the traits he described. He finally concluded that emotional immaturity is probably as important as intelligence as a characteristic of the delinquent personality.

Various other studies agree in that delinquents show tendencies toward instability and emotional immaturity. Other common symptoms were exaggerated conceit and egocentrism, feelings of persecution, feeling that their family and often society in general did not care for them, more than average numbers of impulses to run away from home, lack of self-sufficiency and independence, a greater degree of introversion than one might expect, and antagonism toward authority (police, teacher, parents). All these boil down to neuroticism and immature emotional and personality development.

Tension as a cause was advanced in an interesting explanation of embezzlement (*14*). The author characterized the typical embezzler as a white-collar employee, of better than average intelligence and education, living in a good (nondelinquent) neighborhood, and with a good previous record at work and as a citizen. A banker's remark, "Pay tellers enough and they won't falsify ac-

counts," suggests possibly the origin of the tension. They have large responsibilities and handle large sums of money, but earn mediocre salaries themselves; daily they see well-to-do clients and bank executives; so a train of fantasy reasoning starts which is finally converted into reality.

Sex factors, a major cause of abnormality, are said to be responsible for many cases of delinquency along lines not directly connected to sex. Inadequate heterosexual adjustment, tendencies toward homosexuality, and hatred of father as a competitor for mother's affection, each have been assigned as causes for robbery, holdups, assault, car stealing, and the like. Possibly these situations also fall under the headings of failure to develop a mature personality and of a feeling of insecurity. At times the train of reasoning in analyzing some of the claimed causation is to a large extent dependent upon one's acceptance of psychoanalytic concepts.

F. Social Customs

Social customs account for a certain share of crime. Crime being defined simply as violation of existing law may designate one bit of behavior in one society and not in another. During the reign of the 18th Amendment, millions of people who were very conventional about the rest of their modes of living violated prohibition laws without the slightest qualms of conscience, either because the new law went against lifelong custom, or because they felt it unduly invaded their conception of personal rights. In other instances conflict with law comes from taking into one's own hands enforcement of the "unwritten law," which in one society may be condoned but in another is held culpable.

G. Race

Race has raised much speculation on the subject of predisposition toward crime, as well as on many other topics. Bare facts are that gangs engaging in illegal liquor traffic are largely Italian in antecedents, Irish contribute more than their share of drunken and disorderly conduct arrests, Negroes are involved in many crimes of assault and sex—and we may add that native-born Americans lead in burglary.

On analysis of findings and underlying causes, it would appear

that valid differences, if any, are more matters of foreign versus native born than of where birth abroad may have occurred. A study on the distribution of crimes of foreign born showed that 12 per cent were homicide and 9 per cent burglary, as compared with native born of foreign parentage, 5 per cent of whom were guilty of homicide and 21 per cent were guilty of burglary. The factor of age was not controlled in this study, which is important, since burglary is typically committed by a younger person and murder by a middle-aged one, and there might easily be some systematic differences between the groups.

The Negro has been said to be a natural criminal and to be particularly prone to crimes of sex and personal violence. It is true that Negro populations of states and cities do furnish several times their quotas of convicted. Yet we must look beneath the surface to verify the accuracy of our assumptions. Does the Negro obtain true justice? Usually poorer and unable to obtain the best counsel, and downtrodden, he is half convicted before the trial starts. In one nationally famous case the initial evidence itself against the group of southern Negroes charged with murder was so flimsy that a white suspect would hardly have been arrested for questioning. No colored jurors were chosen, great difficulty was experienced in even finding an attorney to defend the suspects, and local prejudice was one of the principal arguments directed against a northern attorney who volunteered to attempt to secure a measure of justice. Yet the death penalty, later overridden, was at first pronounced after this farce.

It has been pointed out that the southern Negro has been involved in less crime than his northern brother. Yet those in the North are in cities, are attempting to compete for a living rather than passively accepting an inferior role, and are to some extent out of their more natural environment—all of which factors add to the probability of crime.

Finally, charges against the Negro are often far from substantiated. Let one scarcely look at a white woman after dark and a lynching may occur. But will the same lady raise a cry if a white man should turn around to admire her after she has passed?

In one study (*12*) a far smaller proportion of Jewish delinquents were found than their share in the population of the city. Inci-

dentally the same study showed that of 800 delinquents 92 per cent claimed church membership, and 54 per cent attended church regularly. While the percentages of membership and attendance of a comparable group of nondelinquents were not obtained, it is clear enough that a common-sense argument that exposure to religion should militate against delinquency is well-nigh disproved.

H. Age

Age trends in criminality and delinquency display some truly shocking evidence. Young people furnish a far greater share than their proportion of the population warrants. Those from 20 to 24 constitute 9 per cent of the population, yet over 20 per cent of arrests were of this group. In contrast, people over 50 had scarcely half their proportional share of trouble with the law (*11*).

There is some relationship between age and type of crime, although one is warned to appreciate the fact that no age is either exclusively concerned with any given crime nor is any age totally

TABLE 75. Percentage of Those Under 21 Among Those Arrested

Automobile theft	45.8
Burglary	38.8
Robbery	27.8
Rape	26.7
Larceny	26.4

free from it. For example, over two thirds of car thefts and over half of robberies are committed by those under 25. On the other hand, embezzlement, extortion, and confidence games are more characteristic of the middle-aged. Also, crimes against the person —assault, rape—are concentrated above the age of 25. Table 75 shows the characteristic crimes of youthful offenders.

I. Sex

Sex differences in criminality are as striking as any of the factors we have been discussing. The ratio of male to female arrests is about ten to one. This is true with juveniles as well as adults. In addition to gross numbers, types of crime differ materially. Due probably to differences in strength, crimes of violence or those involving considerable physical exertion (second-story work) are

rarely committed by women. Murder by gun or poison however does not involve physical exertion. Women of course are predominately involved in prostitution and running disreputable houses. They are sometimes found in gangs (apart from movie scenarios), often functioning to dispose of stolen goods.

As to the gross numbers of arrests and convictions, there are several factors. First, there is the physical difference mentioned above. Second, the more restricted life of girls creates less probability of being corrupted and of engaging in petty thievery as a starter toward crime. Third, the gentler sex, especially if young and attractive, has more lenient treatment and is more likely to receive parole or suspended sentence. Finally, in matters of sex or violence, sympathy is toward the woman, both in general and more particularly if there was conflict with a male.

J. Insanity

Insanity will be discussed in some detail later, but for the moment let us observe that as a true cause of criminality this has been greatly exaggerated. While there may be some argument to the theory that antisocial conduct must indicate the presence of internal maladjustment, and the more serious the crime the worse the maladjustment, the problem at best is one of mental hygiene and rarely that of psychiatry. But let us not minimize the importance of this problem. Some of the most brutal murders, and multiple murders, are committed by dementia-praecox (schizophrenia) victims. And it is of little comfort to the family of one so murdered to hear that murder by an insane individual is rare. In such cases removal from society in advance of an overt act is imperative if the condition can be detected and diagnosed.

K. War

War has been blamed for waves of adult and juvenile criminality during and after the period of conflict. Again we must separate concomitance from causation. War appears to be only an indirect cause, but its conditions do allow other conditions favorable to criminality to develop. Supervision, both police and family, is slackened. Unsettled conditions make home life less regular. The poorer elements—physically, mentally, morally—are not accepted

into the service and are left at home. These and the youth too young to serve earn high wages, have few responsibilities, and live fast. Social agencies in charge of rehabilitation and probation have more pressing matters to engage their attention. Girls may feel it their patriotic duty to "entertain" soldiers on furlough in ways not approved, to say the least, in the best circles. The aftermath of wars is another thing. Society has experienced an upheaval, and some of this upheaval may result in sudden progress, which progress in turn is accompanied by growing pains. Women's suffrage, for instance, granted after World War I, led to equality and freedom in directions other than political, some of them along moral lines. Many servicemen, uprooted for the first time from a humdrum environment, found it difficult to settle back into quiet life on the farm or in the small town. When they drift to the city, temporary unemployment and search for excitement easily lead to delinquency. On the other hand, the often-heard argument that soldiers trained to kill will come back "trigger-happy" seems to have little justification.

IV. Juvenile Delinquency

While in discussing the psychological make-up and background of the criminal we more or less lumped together the adult and the juvenile offender, there are certain typical problems in antisocial conduct on the part of those below the age of majority.

This age is crucial in combating potential criminality, as well as in all aspects of adaptation to the world—social and vocational, to mention two important ones. It is impossible to cite precise figures as to just at what age most criminals get their start, but it is shockingly young. Records are incomplete, since early offenses are usually pardoned and court files are kept confidential to avoid blemishing the youth's record, not to mention that any record is only of first detection. It is clear, of course, that if the individual can be brought to maturity with a sound outlook toward life and society his chances of staying straight will be vastly greater.

The accounts of many instances of delinquency show that it is usually a step-by-step process. With the boy it may start with lack of spending money—or what he considers adequate finances. Saving up from allowances or modest earnings for a date or a car is

too slow. Borrowing is temporary and bothers his pride. So minor stealing, of goods, cash, or car, follows. Then he becomes enmeshed in a gang or fouled up with the police, and a real criminal career starts. With the girl (*18*) minor truancy from school is followed by trips downtown and to the movies, usually with another maladjusted girl; then evening movies, gradually leading into haunting all-night lunchrooms, and finally drinking and cheap hotels. Yet up to the final step, with either the boy or girl, the task of putting the individual back on the track is not too difficult. Even one slip may be just that—a slip. As one warden pointed out, a boy *inadvertently drives a "borrowed" car across a state line and* becomes involved with Federal authorities. The ensuing jail sentence often turns out an embittered and hardened criminal, neither *cured himself nor, as judged by statistical evidence, a deterrent* and a warning to others.

In our previous discussion of who the criminal is we emphasized *probability* and not certain or irresistible forces. In a sense we must acknowledge that anything short of certainty shows that we have not arrived at all the causes, or the true causes. Psychologists and sociologists feel that criminality is essentially environmentally caused. Yet why do some children from the worst environment or the unhappiest family escape delinquency? Burt (*2*) sums this up when he says:

"To find an external influence of this kind [evil companions] at work without some inner predisposing factor is far from usual; it is as rare as a seed sprouting on bare rock with no receptive soil to nourish it. Against contagion of whatever sort, the strong mind, like the healthy body, is generally immune. . . . The victims are almost always those who, temperamentally or otherwise, are already disposed to anti-social conduct; and the cinema (or other forces) can do little more than feed and fan the latent spark."

In other words, Burt is suggesting some innate weakness. But given an excellent environment, many with such a weakness will escape delinquency, as they do physical disease. It takes, this theory would suggest, inherent weakness plus unfavorable environment, plus perhaps also a few unfortunate incidents, to produce delinquency.

Unfortunately the prediction of delinquency or criminality is more on a descriptive than on a statistical level. The best figures are only in terms of probability, and usually rather weak trends at that. This means, then, that for the present remedial work on juvenile delinquency will have to be done by the *case method*, and forestalling efforts will have to consist chiefly in spotting early tendencies and applying remedial measures quickly. Each case will have to be analyzed and adjusted by itself. This does not mean that statistics quoted are worthless; they can serve admirably to point out areas of danger.

One study, however, made such an attempt, that is, to predict delinquency. Behavioral and environmental factors were studied in a junior high-school population in a New York State manufacturing city of 35,000, and delinquents were compared with nondelinquents (*15*). Of all factors studied thirteen proved to be reliable group indicators of delinquency. (One will remember that a critical ratio of three or greater indicates a certainty that one group is truly different from another; in this case, to mention the first trait, that delinquents, taken as a whole, are more likely to live in a high-delinquency area than are nondelinquents.) The thirteen factors center around poor environment, family insecurity, and poor school behavior. In contrast to these data, shown in Table 76,

TABLE 76. Factors Conducive Toward Juvenile Delinquency

Factor	*Critical Ratio*
Living in delinquency area	9.10
Chronologically overage for grade	8.88
Living in very low-rent area	8.40
Broken home	7.50
Number of different homes lived in	6.76
Five or more absences from school	6.43
Repeated more than one term of school	6.40
Failed two or more subjects	6.19
Two or more terms with failing marks	5.61
IQ below 90	4 to 6
Low employment status of father	4.72
Times tardy	4.65
Five or more illegal absences from school	4.32
Intermediate position among children	2.10

others found reliably *unfavorable* to delinquency were being young for one's grade (critical ratio of 7.02), having an IQ over 100 (5+), being youngest in the family (2.80), and having mother stay home as housewife (2.10). On this test delinquents showed up positive on an average of 3.99 items and nondelinquents on 1.80. Stated another way, those positive on three or more items included 69 per cent of those who had been delinquent and 26 per cent of nondelinquents. Here again we see a marked trend, but not certainty. We miss some of the delinquents (who probably came from good homes and were bright enough to do well in school) and include some well-behaved children. But this test or a similar or improved one can indicate predelinquent possibilities, and if individual analysis fails to disclose such tendencies we need proceed no farther.

One very broad cause of delinquency is lack of ability for self-expression. This may result from a variety of causes, fairly common ones being extreme poverty, drab neighborhood, and uncongenial home surroundings. The child looks for opportunities to lead a more colorful existence and to escape from the unpleasantness of his surroundings. He may start out by simple truancy from school and from the home, then get into gambling, begging, and petty thievery. More serious forms of the same errors may ensue as he grows older. One of the worst consequents is that the excitement and novelty of the irregular life practically spoil the individual for regular work. He finds it too confining and monotonous, and the money is earned too slowly and with too much difficulty in comparison with that obtained by thievery, holdups, or swindling. This makes the task of rehabilitation extremely difficult, even if abstractly the delinquent realizes the benefits of going straight.

On the other hand, to reiterate that there is no absolute need for an individual from a limited environment going astray, let us point out that the majority do not. They may find self-expression in more approved and orthodox activities, such as sports, social organizations, intensive reading, music or art, or hobbies of various sorts.

To illustrate the growth of delinquency let us present a very brief summary of some of the salient features of a fascinating and

illuminating case study which has been contributed by Shaw, entitled *The Jack Roller.*

The boy, called Stanley in the biography, was born of Polish parentage in a very poor neighborhood in Chicago. His mother died when he was four, and a year later his father married a widow with several children of her own. She proved to be unsympathetic and favored her own children over her husband's previous offspring. The father showed little outward affection for his children, and was a heavy drinker. So young Stanley began to run away from home at about six years of age, staying away for weeks at a time, begging and sleeping on doorsteps. He haunted the West Madison Street district, with its bright lights, saloons, and flophouses. In these escapades he first encountered police authorities, who merely returned him home.

Soon he began petty thievery and gambling. He met some older boys—although even these were preadolescents—and genuinely admired their experiences, general toughness, and casualness in breaking the laws of society. This is a common attitude; pride is taken in breaking laws rather than in living an upright life. Most of the stories are undoubtedly lies, or grossly exaggerated, but they inspire similar stories and probably deeds to match.

At nine years and nine months Stanley was sent to a reform school. Instead of being reformed, he emerged bitter against society and a real criminal. His life then became one of drifting, thieving, and gambling. One or two jobs which he got he left very quickly, because the work was monotonous and because his superior gave him orders. Both these characteristics are evident throughout his whole early life. He constantly had a chip on his shoulder, always considered the other man in the wrong, was unwilling to compromise, and would not do what others suggested.

These traits seem to agree with Burt's hypothesis, as they appear to be largely innate. Even after reform had become complete, his success was in salesmanship, which is a varied activity, largely done by oneself, and without much supervision. In answer to those who would attribute Stanley's downfall entirely to the home conflict, we might point out that his own brothers and sisters kept straight and that one of his stepbrothers, who was favored at home (such as that was), participated in gang activities. Both the fertile

soil and the appropriate environment were present to bring about delinquency; possibly neither by itself would have had that result.

As he came into later adolescence he fell into the more serious crime of "jack-rolling." This consisted in robbing drunks who had passed out in the gutter, or holding them up while reeling along the street, or even enticing homosexuals into a room and then holding them up with the aid of accomplices. He was careless enough, after one of these episodes, to wear a pair of trousers he had stolen, with the result that he spent the next year in prison—a real prison this time, not a boys' reformatory. The ironical thing was that his pride made him lie about his real age, saying he was 18 when he was really just under 16. The truth would have saved him a great deal of hardship.

When he came out his attitude seemed to have changed. The food and conditions were so unpleasant that finally punishment seemed to have made some impression on him. He did get into two or three bits of trouble, such as quitting monotonous jobs and getting into fights (it never occurred to him, by his own statement, that there was any other way of settling a disagreement), but at least he did not encounter police authorities.

His final cure seems to have started when he more or less accidentally got a job in a hospital feeding experimental animals. He first had contact with people who as a group were educated and refined, and he felt ashamed of his appearance, vocabulary, and manners. He saw that toughness was a liability, rather than an asset. He also fell in love with a girl at the hospital and tried to develop himself to be worthy of her. To make the story end right, he has gone straight ever since, they are married and have a fine home and child.

Several times previously he had seemed on the verge of mending his ways, but the incentive to adopt a more routine, ordinary, and safer existence was apparently not quite strong enough. He had been taken into two or three homes, found more congenial surroundings with a married sister, and once fell in love with a girl in another city. But the lure of the West Madison Street district had proved too much, although one could see suggestions of hope at intervals. The incentive that could change his habits had to be a powerful one.

We might express it this way. Granted the worst possible environment, say one compounded of all the unfavorable factors we have discussed—slum neighborhood, nagging stepmother, father unhappy with his second marriage and a drunkard, gangsters among one's associates, having older brothers and sisters guilty of truancy or other delinquency—in the writer's opinion the chances of that individual's becoming delinquent would still not be greater than 60 to 70 per cent.

V. Scientific Methods of Crime Detection

Obviously, the entire purpose of criminal-court proceedings, as well as the efforts of police, detectives, and others outside of the formal courtroom situation, is to discover the guilty person and the degree of guilt. Since this is largely a matter of human behavior, there are a number of ways in which psychological facts and principles can assist in solving the case.

A. Scientific Methods

Scientific methods belong chiefly to physical science, so will be mentioned here only briefly.

1. *Fingerprints left on objects at the scene of a crime prove at* least that the owner was on the premises at some time. By means of a system of symbols any prints obtained can be compared by telegraph with those on record in police headquarters all over the country.

Footprints on mud, soft ground, or turf also can help identify a suspect. *Not only is width and length of shoe shown, but if the* print is clear enough one can tell the state of wear, identify kind of heel, condition of nails, etc. Further, the length of stride, manner of putting down the foot, and any irregularity of gait will be measurable. These latter, we note, are really aspects of behavior.

2. *Bullet identification* is made possible by the fact that each gun barrel leaves very different microscopic traces on the soft lead which goes through it. The marks are photographed, enlarged, and compared in detail with bullets fired from suspected guns into a bale of waste or box of oiled sawdust. Next thing, of course, is to

find who fired the gun, but at least the search is very much narrowed.

3. *Handwriting* is definitely behavior, and to an expert is as individual as fingerprints or facial appearance. Attempted disguise does not fool the expert, as even if one tries to change such obvious items as slope and shape of letters, the relative size, placement on the line, and spacing between will give one away. (Previous remarks that handwriting does not indicate personality do not apply to the present discussion; here we are talking only about identification and not analysis.)

A typewriter has characteristics which are almost as individual as human handwriting. Not only can make and model be identified, but the older it is the more individual peculiarities will show up. Certain keys will be slightly out of line, certain letters may have become imperfect, impression may be uneven, and the carriage may space irregularly. Further, an individual user will leave some of his own typing habits impressed in black and white.

4. Other purely physical methods may be enumerated without amplification: detecting where a man has been from dust on his shoes, pockets, or even wax in his ears; discovering origin of object from analysis of wood or metal; comparing samples of blood; often surprisingly complete description of person from microscopic examination of a single hair (sex, age, race, vocation, habits). In the famous Lindbergh kidnaping case a decade ago one of the most damning bits of evidence was the exact duplication of grain, knots, and nailholes of the ladder used in entering the child's window with boards in the suspect's attic floor joists.

B. Study of Possible Motives

Crime does not simply happen. Beyond a rare one committed by a degenerate, murders (for example) are generally done either for revenge, fear of detection, robbery, or in the heat of passion. If one can deduce why the crime was committed, he will have reduced the list of suspects to a very few or even one. If a man is murdered while alone and his valuables are not touched, but his files have been rifled, it is pretty certain that neither morality nor robbery was an issue, but that quite probably someone thought that his private papers contained information of an exceedingly

embarrassing nature to someone, so that someone went as far as murder to gain possession of them.

One double murder contained the following details. A man had been shot in company of a woman not his wife. He had been shot just once, and his hands folded gently across his chest. The woman had been shot several times, and her face trampled upon. Obviously few, and probably only one person, could have had such feelings that he or she would kill them both, yet treat the man gently and the woman brutally.

The most puzzling cases are those in which the motive cannot be ascertained or in which the motive is so general that thousands of persons could be involved. If the man who is shot is president of a bank which just went broke, or if he is a prominent gangster, there could be dozens of likely perpetrators. In a kidnaping or robbery case almost anyone who needs money badly or makes a profession of such crimes might be suspected.

It might be added that to determine a motive a good deal must be known about the habits and recent history of the victim. If a stranger or recluse meets a violent end, there is scanty information from which to start work in tracing the responsible party.

C. *Modus Operandi*

This term means literally "method of doing things." Handwork, like personality, of an individual is often identifiable. Just as a connoisseur can tell whether a painting in dispute is a genuine Rembrandt or Van Gogh, or a musician can discriminate from a few chords music by Beethoven or Wagner, so can a criminologist spot the work of a certain individual.

As a first sample, one can tell expertness of carpentry, metalwork, or electric wiring. Sailors tend to tie certain knots. One might on occasion even deduce age or place where the individual received his training from the way he does things. Conversely, expert work might exonerate a suspect with no experience along those lines.

A murder in northern Wisconsin was solved by examination of bomb fragments, which showed among other things a trigger with an angle of exactly 22 degrees. The premises of a certain suspect

were searched, and among his various farm machines were found a number of metal pieces with exactly this same angle. He was an expert-mechanician, and had seemed to favor this particular angle in his work. This stood out almost as clearly as if he had placed his trade mark on his products.

Behavior disclosed guilt in a murder and robbery case. Around the scene numerous chewed matches were found, apparently done by the culprit while in a state of high tension. The suspect was questioned at a table on which a number of matches had been carelessly thrown. During the strain of interrogation he picked up some of these and chewed them exactly as those found at the scene.

An impostor of nobility was located in New York City when he *bought his favorite tobacco, a very unusual and expensive brand.*

In a southern plantation murder, suspicion was directed toward a certain degenerate living in a nearby cabin. One of the most damning bits of evidence was the fact that he was known to have washed his shirt the day the murder was committed. He was of such filthy habits that it seemed likely that washing would only have been resorted to in order to remove something, in this case probably bloodstains. One may draw his own moral from this episode.

In another case stolen property was identified partly by a tube of toothpaste which had been squeezed in the middle, a habit of the owner. In this case the modus operandi was on the part of the aggrieved person rather than of the criminal, but the point is that *a consistent human habit assisted in solving a crime.*

Many robbers and swindlers operate in consistent ways. One may enter a house with a pass key, another by jimmying a window. One may specialize in silverware, another may take only jewelry. Even time of day, class of home entered, and means of escape are often specific to the particular robber. Swindling and confidence games, necessarily very complicated, give a great deal of room for personal habits to show up. Naturally detection on these bases depends on the individual's having a lengthy record, and police understanding his ways of operating well enough to have arrived at generalizations.

D. The "Lie Detector"—a Measure of Emotion

The instrument popularly called the lie detector has aroused a great deal of interest in this phase of guilt detection. The general idea is not new. In India long ago the "ordeal of rice" was used. Suspects were forced to chew a mouthful of dry rice; if they could spit it out moist it was assumed that their conscience was clear since normal salivary flow had occurred.

It is of course well known that during emotion a number of physiological changes take place, centering around heart rate and blood pressure, rate and character of breathing, perspiration on skin surface, and interruption to digestion. Some of these are more readily measured and interpreted than others. Actually, blood pressure readings provide the best single index of emotional disturbance, which in our present connection means deception. These readings furnish automatically also rate of heartbeat, and pressure both at systole (high point) and diastole. If record of breathing is desired, a pneumograph can be used; this is a flexible rubber tube strapped tightly across the chest which expands and contracts as one breathes. Light, easy-moving pens trace records on paper, to which is added a time line with one-second intervals recorded. Thus continuous recording is made of blood pressure, pulse, and respiration.

Lie detection of a suspect usually employs a question-and-answer technique, somewhat similar to a free-association test. A list of questions is carefully prepared, usually of three major types: questions of no particular significance, some connected to the crime, and finally some pertaining to guilty knowledge which only the perpetrator should have (not common knowledge through newspaper accounts, known to the family and friends, etc.). The assumption is that more or less violent emotional disturbance will occur if a touchy spot is hit.

The sensitivity of emotional responses is known to all of us, in such daily life instances as being accused of blushing when one does not realize it, of a slight worry or upset taking away our appetite, or of finding one's heart beating rapidly during an exciting portion of a movie. Think how much more disturbance the person guilty of a major crime must have!

The present writer can quote a personal experience with this "lie detector." When one of the individuals who has used it very widely was conducting some of his early research, he asked me to serve as a subject in a dummy experiment. He showed me ten playing cards, and asked me to select one but to keep my choice to myself. Then he placed the blood pressure and breathing apparatus around me and showed me one card at a time, asking me "Is this the card?" I was instructed to reply with the single word "No" each time. He wrote the name of each card at the appropriate place on the tape recorder, and at the end without any hesitation named the correct card. Yet it was clear that I was not guilty of anything serious, and I knew the apparatus and was in a familiar and friendly situation. My blood pressure had gradually gone up with each succeeding card, until the one I had selected had gone by, then the pressure took a drop back to normal and remained there through the remainder of the cards.

That this technique is strictly behavioral, and can be used without verbal questioning, was shown dramatically in a west-coast murder case. A man was suspected of disposing of his wife, but since the body could not be found no formal charge could be made. He claimed she had merely disappeared. Placed in the apparatus he was confronted with a large-scale map of the city, and place after place was pointed out with the invariable question "Did you hide the body here?" The situation resembled our childhood game where we called out "warmer," in that as the area where the body had been hidden was approached blood pressure went up and as the pencil receded pressure declined. Ultimately by using blood pressure alone, and in the face of consistent denials, the correct spot was found within one city block.

We present in Figs. 52-54 photographs and records of this instrument in action, as presented by Fred Inbau (*10*), formerly Director of the Chicago Police Scientific Crime Detection Laboratory and now a member of the Chicago Bar. The captions below each figure are self-explanatory.

Before such a test can be considered valid, there are several critical questions which must be answered.

1. Would not an innocent suspect show a great deal of emo-

tional disturbance from the mere fact that he is put into such a situation?

Actually, yes, but the critical observation is that he shows equally strong reactions to all questions, whereas the guilty person will

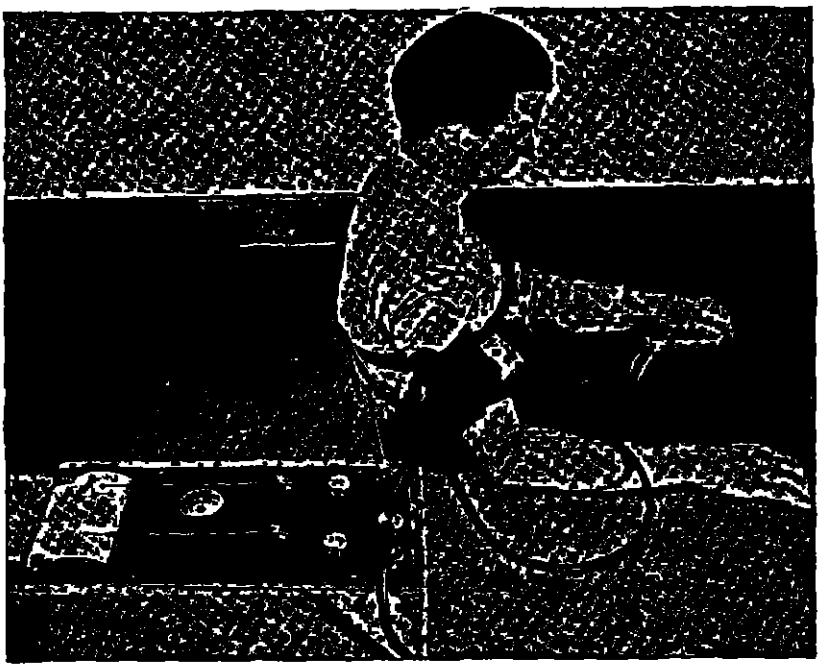

FIG. 52. Lie-Detector in Operation.

Observe the pneumograph tube around the subject's chest and the blood pressure-pulse cuff around his arm. The upper pen on the instrument panel records the respiration; the lower one, the blood pressure and pulse. (From Inbau's *Lie Detection and Criminal Interrogation*, The Williams & Wilkins Company.)

react especially violently to questions specially prepared for only one with guilty knowledge. It is the superimposition of one on top the other that is important.

2. *Could one control his emotions sufficiently to defeat the* apparatus and the purpose of the experiment?

No—these reactions are under control of the autonomic nervous system, which is unconscious and involuntary. In one instance the

lie detector was successfully used in detecting which of a number of medical students had stolen a valuable microscope; yet all were thoroughly familiar with the instrument through laboratory experience.

3. May some individuals be so hardened that they show no symptoms of guilt, much as experienced poker players display an impassive exterior (poker face)?

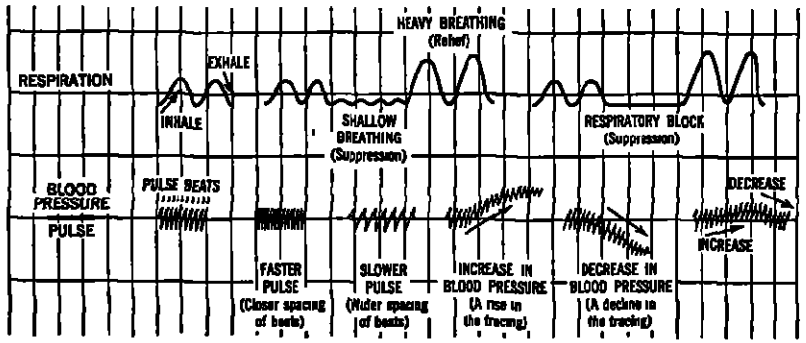

FIG. 53. Diagrammatic Sketch of Lie Detector Tracings of Blood Pressure, Pulse, and Respiration.

The above sketch identifies the lie-detector tracings, and, in a very general way, the types of blood pressure, pulse, and respiration changes which appear in later illustrations of actual case records.

This sketch was made on a section of the paper strip chart ordinarily used in the instrument. The ruled vertical lines—or rather the spaces between them—serve the purpose of timing the recording. Each space represents a five-second interval, since the paper rolls off the instrument at a rate of twelve spaces (or six inches) a minute. (From Inbau's *Lie Detection and Criminal Interrogation*, The Williams & Wilkins Company.)

Probably not, beyond someone in a stage of advanced dementia praecox. One might show less emotionality than another, as in daily life, but not to the point of concealment.

Let us quote two cases from Larson, of the Northwestern University Crime Detection Laboratory (*13*).

"Case 28. *Fake Hold up.* A young man of twenty-three came to the police with a story of being held, bound, and gagged by two masked men while his employer's money was taken away from him. According to routine procedure, he was tested as to the veracity of his story with the result

that his record showed disturbances and seemed indicative of deception: He later confessed that he had gambled and lost the money and was afraid to tell the truth."

"Case 31. *Burglary.* One evening the officer on the waterfront beat discovered a mulatto in the act of jimmying the back door of a drug store. The burglar was using a two-foot crowbar as a jimmy and on being apprehended attempted to strike the officer with it.

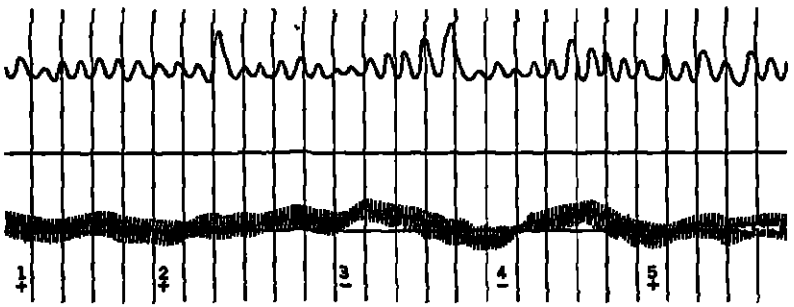

FIG. 54. Record of Thief Who Later Confessed Stealing $900.

Questions *1*, *2*, and *5* were irrelevant ("Is your name . . . ?"; "Do you live in Chicago?"; "Were you born in Illinois?"). At *3* the subject was asked, "Do you know who took the missing money?" and at *4*, "Did you take it?" At *3* and *4*, when the subject replied "no," observe the increase in blood pressure and the suppression in respiration. Moreover, the pulse beat for about ten or fifteen seconds after the subject replied to *3* and *4* is somewhat slower than at *1*, *2*, and *5*.

The deviations at *3* and *4* from the subject's "norm," as established at *1*, *2*, and *5*, are termed "specific responses."

The numbers *1*, *2*, *3*, *4*, and *5* identify the questions asked at those points; the plus (+) or minus (−) signs alongside or underneath the numbers signify, respectively, "yes" and "no" answers. (From Inbau's *Lie Detection and Criminal Interrogation*, The Williams & Wilkins Company.)

"After the suspect had been fingerprinted and searched, it was learned that he was out on probation for burglary. He consistently denied any further burglaries and readily submitted to a deception test. He exhibited marked nervousness and was questioned regarding other possible burglaries. Whenever he was questioned on these points the record exhibited marked disturbances. He was especially upset in reference to a question concerning drug stores.

"As a result of the test it was decided that he was responsible for more

than he had confessed, and naturally it was thought that he might have robbed some drug store. The officer and the inspector were told that in the opinion of the examiner he was lying. The inspector was successful in learning of a drug store in a neighboring town that had been burglarized. Here a number of pennies had been stolen from the register and the suspect had an unusual number of pennies when apprehended. He finally admitted that he had committed this burglary and thus enabled us to check the record.

"Throughout the test the subject exhibited marked fear symptoms such as tremors, peculiar inflection of the voice, etc."

An important fact is that the record takes a drop after tension is removed, especially after a confession. This reminds one of a psychiatric concept which claims that normality is generally restored after a repressed emotion is brought to the surface. The suspect is often run through the same list of questions a second time, following confession. He then answers them practically calmly, and his emotional record is equally steady. Through this procedure and that of using neutral questions in the original list, we are able to compare the suspect's record under various degrees of excitement.

Analysis of types of word reaction is also useful. When the normal reaction is held back, as when lying, it may often be detected by a very unusual response, repetition of the stimulus word for the purpose of gaining time to think, unusually slow response, and uniformly long reply time which the subject uses so that his answers to critical questions will not appear unduly slow. It has been found (5) that guilty subjects are slower in replies to all sorts of words, neutral or critical, and are much more variable in time taken to reply. These last findings, by the way, were from a laboratory test with guilt only of the sham type.

How are these records used practically? Legally the method falls under the heading of testifying against oneself, so any suspect has the privilege of refusing to allow himself to be tested. Further, judges in their traditional conservatism have not yet permitted the instrument to be brought into formal court sessions. But it has been used in preliminary questioning in literally thousands of cases, and has secured many confessions when the guilty person realized that he was up against an instrument he could not de-

ceive. Regardless of his verbal replies and the expression on his face, he can see objective evidence of his heart going faster than normal, and he becomes more and more tense. In this sense, the technique has been called a "humane third degree." If a person maintains his innocence but refuses to allow himself to be tested, in spite of the explanation that in such a case the results will contribute toward his release, suspicion will be redoubled just as it is if he refuses to take the witness stand in open court.

A final remark is that the authorities who use this test are as anxious to clear innocent persons as to convict the guilty. One might say they are interested only in the truth, and "let the chips fall where they may." A person who claims innocence is given opportunity to help clear himself, and the guilty person is not forced to take the test against his will.

E. Drugs

Drugs have been used for the same general purpose, approached from a slightly different angle. The theory behind the use of sodium amytal and other drugs is that the individual is put into a state where he can answer questions rationally, yet the inhibitory centers of his brain are temporarily not functioning. To tell a lie again and again, and keep the story consistent, calls for the keenest alertness and an excellent memory, and under these drugs such is no longer possible. This would probably not apply to statements made while a person is more or less intoxicated. While he might not be able to fabricate a very convincing story, at the same time what he did say might be definitely distorted. Further, his memory, especially of events in the last few hours, is apt to be pretty hazy.

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CHAPTER XXX

PSYCHOLOGY IN LAW II: COURT PROCEDURES AND PUNISHMENT

I. Witness and Testimony

It has been commented that a court trial is largely a fight between falsehood and the truth. Our first thought is of the defendant as denying his guilt and the prosecutor trying to pin guilt on him. But we must also consider the accuracy with which various facts are presented, and the memory and prejudice of each witness. It is of great importance to decide what is probably true and which of two statements is more nearly correct. In this section we shall examine from a psychological angle those functions of memory which are utilized in court procedures. We shall make a tacit assumption that memory is generally moderately accurate, and thus limit ourselves to pointing out causes of inaccuracy.

A. Perception

Perception comes first in the process of acquiring and assimilating information. One often says that he cannot remember the name of an individual to whom he has just been introduced, when actually it was because he did not pay sufficient attention at the time to get it clearly. What has not been heard obviously is not learned, hence cannot be remembered.

1. Opportunity to observe. The first question we may ask is whether the witness was in a position to see or hear; and second whether or not he did observe. We may cite three automobile-

accident cases in which evidence was not accepted. In one the passenger was asleep on the back seat; in another the witness was reading a newspaper at the time of accident. The third was closer to the boundary line. A man gave evidence concerning the behavior of a car coming toward him, yet admitted that a large truck had been just ahead. He may have seen something, but his field of vision was necessarily very limited.

Identification of handwriting by witnesses presents some interesting problems. Statements as to identical specimens are usually accepted only if the witness actually saw the document in question being signed or if he had in the past seen enough of the writing—in letters, ledgers, checks—so that the identification can have a sound basis.

2. INCIDENTAL MEMORY. There is a great deal going on about one at any given moment, and he cannot pay full attention to everything. If attention for a particular incident has not been deliberate, memory will be that much less certain. For example, did you hear a truck (or a footstep) about 3 A.M. last Saturday night? Unless it woke you up, kept you awake, or was unusual enough to arouse your curiosity, such memory is too capricious. Suppose a railroad ticket agent is called in to testify whether he sold a certain individual, who was escaping, a ticket on a certain day. Just what chance would a man in a busy station have to notice carefully all patrons?

3. EXCITEMENT. Excitement, in the form of rapidly moving, violent, and dramatic incidents, certainly causes memory to be less reliable than if one has a chance to witness them under more quiet conditions. It is again a question of the original observation rather than of memory. The writer has collected numerous newspaper accounts of holdups in which the participants fled in an automobile. Only once in all these did an eyewitness have the presence of mind to note the license number. The same may be true in an accident. Excitement so divides one's attention that he misses many details, knowledge of which would be very valuable later.

4. EXPERT OPINION. In certain technical matters the witness must be shown competent to judge what he has observed or what has taken place before his statements can be given much weight. To identify the make and model of a speeding automobile one

must be very familiar with cars, but if there is time to inspect in a leisurely way, the observation of an amateur may be adequate. Testimony of one not an eyewitness may be sought in such matters as diseases and mental disorders and in engineering and chemical problems. In general the practice is to call in an expert only when the jury is not sufficiently informed to form its own judgment in reasonably accurate fashion, while a layman witness is usually required to stick to statements of observed fact only. For instance a dress buyer might identify at a glance the make of a dress worn by another woman on a certain occasion, or an anthropologist certain racial characteristics.

The necessary qualifications of an expert witness were the subject of argument in an old case (41 N.H. 54) but one which raised several crucial issues. The charge was of "injuring, by immoderately driving, a horse, hired from the plaintiff by the defendant. . . . The defendant excepted, on the ground that the witness was not an expert." The following three questions were put: (1) Is the subject concerning which he is to testify one upon which the opinion of an expert is pertinent? (2) What are the qualifications necessary to entitle a witness to testify as an expert? (3) Has the witness those qualifications? These must be decided by the court for any given trial, on any given subject, and for any given individual.

5. IDENTIFICATION AND DISCRIMINATION. Under the same general category very interesting questions arise with regard to identifying individuals, especially if they are of different race or type from those with which the witness is familiar. The problem is summed up very neatly in these words of a judge in passing on a recent case.

"The crux of this situation appears to be whether this defendant was actually the person who committed the holdup. We have a number of witnesses. Whether the white witnesses actually identified him, or only saw a Negro is uncertain. Those of a different race may be unable to differentiate as finely as they can among their own kind, unless they have had considerable experience. It is said that cattle owners can tell one sheep from another, a task which is impossible for the rest of us. But we also have two Negro witnesses who are certain that they identified this man, so the testimony seems too strong to admit of further doubt."

B. Memory

If we assume that perception, observation, and original learning were satisfactory, the next problem is the accuracy of memory with the passage of time. Witnesses are subjected to direct and cross questioning of a very detailed nature, often on apparently trivial (at time of occurrence) incidents, after lapse of months or even of years. Psychologists are very suspicious about the accuracy of such testimony for a number of reasons.

1. LAPSE OF TIME. From a large body of experiments we may draw a few generalizations concerning the course of forgetting with the passage of time: (a) The longer the time the less we should expect the individual to remember. (b) Minor details will slip more than major events. (c) Apart from the confusion involved, vivid or striking events are remembered better than those more neutral in character. (d) The less deliberate the attention the less reliable will be one's account. (e) Most of what is said to be remembered is accurate. (f) Not often is something of an erroneous nature added; any distortion is usually of events which were once actually observed.

Considering the facts we have seen in the last few pages, some of the testimony given in the following case is positively hair-raising. We shall touch only on some of the highlights of this case, quoted elsewhere (*10*) in detail. In the early frontier days in Missouri, Jester and his partner set out. Later Jester arrived all alone, claiming his partner had gotten homesick and gone east, selling out his outfit. Murder was suspected, so Jester was arrested, but escaped, and was not brought to trial for 30 years. Several supposed eyewitnesses testified at this late date, under the following conditions. Two women, who had been girls of 12 and 14 at the time, and who were riding a single horse facing into a blinding snowstorm, gave a detailed description of Jester and his wagon, including a blood-soaked buffalo robe with a hump under it. A boy of 6, now 36, stated that he and his father saw a body floating downstream in the spring freshet, and he gave detailed information about its character and clothes. Just how much genuine memory could exist after 30 years, especially considering the fact that these

witnesses had been children? And why had they not reported the facts earlier, if they had made such an impression upon them?

2. TYPIFICATION. Typification often takes place with the lapse of time. Right after the incident, such as a holdup or dramatic accident, the account should be reasonably accurate, but later the tendency is to describe in terms of what one thinks might have taken place. A holdup always seems to be committed by a large, swarthy, villainous-looking man with two guns, who then leaves at a tremendous speed in a large car with a machine gun poking out of the rear window. We wonder if no nice-appearing blond ever committed a holdup, escaping in an old jalopy incapable of more than 40 miles an hour! Anyone who causes an automobile accident is accused by the occupants of the other car of driving with the utmost recklessness. The movies have been attributed with helping along this phenomenon of typification.

For this reason, and because of the loss of memory with time, it is important to get an immediate statement, in writing if possible. This gets the facts when they are fresh, before typification or suggestion can enter, and will crystallize the narrator's story.

3. EXAGGERATION OF THE PERSONAL ANGLE. People like to tell stories, and the more vivid and the more the narrator becomes the center of attention the better. Accuracy often suffers in the interest of dramatic vividness.

A couple of months ago I was out driving with my aunt, when we came upon a car which had tipped over. About half a dozen other cars had arrived on the scene before us. This fact, since it was not a much-traveled road, and the fact that the occupants of the car had been taken to a cottage about 200 yards away to recover from the shock, made me positive that the accident must have happened at least 15 minutes previously.

I noticed in several tellings of the story that my aunt got gradually nearer and nearer to the accident itself, until about the fifth time she repeated it we were by then following right behind the car and had seen it tip over, spilling the occupants out over the road.

4. SUGGESTION. Since court action is usually from a week to several months after the incident, it is very difficult to keep out suggestion. A man may have a vague idea of the description of an individual, but after several other people have stated positively that they were sure that the suspect was the person who performed

the act, his judgment then becomes certain. The newspapers greatly influence not only opinions, but judgments of actual fact. It is certain that a witness or potential witness, being rather immediately concerned with the case, would pay more than average attention to journalistic accounts.

Disputes have arisen over the admissibility of testimony the recollection of which has been assisted by reference to written material. In 56 Vermont 426 it was ruled that a witness could use notes both to help his memory to a state of completeness and also when he might fail to remember at all, if he has confidence in their accuracy. This was concurred in 68 Conn. 1. The latter type of note might include such a thing as a check, the act of writing which one could not be expected to remember long after, but which one assumes to be accurate and to have been written with due care. Evidence from a ship's log has been accepted, even though the witness was not the man who kept it. He was sure, however, that the man who wrote it was highly accurate, and stated that he himself checked it occasionally. One familiar with a ship's log would be entirely satisfied that entries are inserted only with due caution and effort at complete accuracy. Suggestion, guesswork, and inaccuracy are at a vanishing point.

5. PREJUDICE. In matters involving judgment or opinion, one must take into account possible prejudice on the part of witnesses. In assigning responsibility for an auto accident a passenger will naturally tend to favor his host. Each witness will swear his driver did all he could to avoid the collision, and that the other was negligent.

Likewise, if a person stands to profit by the outcome of the case, such as settling a will or testifying in defense of a relative, his testimony is liable to be that much less accurate. Errors in memory may be conscious, or they may be unconsciously motivated and not actually involve deliberate dishonesty at all. Persons on different sides of a question tend to interpret the same objective facts in different ways.

Dying statements have come in for considerable controversy. The consensus seems to be that a person knowing his condition would have no motive for deception; in fact, there would be every motive for telling the truth. Even in cases of severe hatred, the feeling

would be tempered by the situation and a vague fear of the unknown. Naturally, we should not accept testimony if the dying person were delirious or otherwise mentally abnormal.

6. CAPRICIOUSNESS OF MEMORY. We cannot lay down sure and certain laws of memory, and probably never will be able to. Memory does surprising things. For no apparent reason we may recall a trivial incident which occurred in childhood, and yet forget a certain very important recent matter which one desires strongly to remember accurately. Practically, this means that each bit of testimony must be sifted and weighed by itself, on its own merits. We can only suggest certain general principles of memory or conditions which may qualify or disqualify a witness.

C. Capabilities of Various Classes of Witnesses

1. TESTIMONY OF CHILDREN. The testimony of *children,* particularly under 12, is under grave suspicion and often is not accepted at all. It is assumed that a child is too suggestible and that his judgment is too immature to furnish reliable evidence. In one case on record (159 U.S. 523) an appeal was largely made because a boy of five and a half had been permitted to testify. As it happened, the original court had not gone into it blindly, but had tested him to some extent, as follows:

> The boy, in reply to questions put to him on his *voir dire,* said, among other things, that he knew the difference between the truth and a lie; that if he told a lie, the bad man would get him; and that he was going to tell the truth. When further asked what they would do with him in court if he told a lie, he replied that they would put him in jail. He also said that his mother had told him that morning to "tell no lie," and in response to a question as to what the clerk said to him when he held up his hand, he answered, "Don't you tell no story." Other questions were asked as to his residence, his relationship to the deceased, and as to whether he had ever been in school, to which latter inquiry he responded in the negative.

From these replies it seems clear enough that this boy understood the distinction between truth and falsity, and that he was capable of answering direct questions, even if in somewhat immature fashion. He appears to have been a bright boy; another of the same age could have been entirely unsuitable as a witness.

For practical purposes in using children as witnesses, we have to consider: (1) mental development of the particular child; (2) tendency toward fantasy, prominent in all children but more so in some; and (3) the method of questioning. If truth is desired (we discuss this in the next section), and granted the child is immature and suggestible, securing a deposition by means of a child psychologist would appear most practical (7).

2. SEX. It has been asserted that the testimony of a woman is less reliable than a man's, because she thinks less logically, is more inclined to become emotionally upset in a trying situation, tends to dramatize the story more, and does not answer cross-questioning as precisely. But regardless of personal opinions, and regardless of the distress a woman's circumstantiation may cause an attorney, there is no evidence that facts reported are any less accurate than those of male witnesses.

3. PERSONALITY. Personality is tenuous to measure and complex to estimate accurately. But it should be considered in relation to accuracy of a given witness's testimony. We might ask whether the story of a scientist might not be more reliable than of say a poet or musician who happened to witness the event under discussion. One is trained to observe and analyze carefully, and not to arrive at a conclusion hastily; whereas the other lives an inherently emotional life. It might be remarked that some opine that a scientist is no better than a layman in fields other than his own, however.

An experienced trial lawyer has divided witnesses into several distinct classes (*11*), which we note are really personality types. The *egotist* is hard to handle, as he thinks his evidence and knowledge should settle the case summarily, and he is hard to make answer a question directly. The *overzealous* witness tries so hard to help the case, or the side which called him, that he is almost useless. The *quick-tempered* individual is easy to rattle, especially on cross-questioning. The *subtle* witness quibbles so and is so evasive that his testimony may have to be discarded. The *hostile* person constantly looks for deeper significance and questions which may trip him, and has to be handled with kid gloves. Finally we may add, which that author did not, the *straightforward* individual who answers briefly, to the point, and with frankness.

4. FEEBLE-MINDEDNESS AND INSANITY. Feeble-minded and insane individuals quite commonly have been refused the right to give testimony. From what we know of functional disorders we would say that while they are in a quiescent state a report by an insane person should be as good as that of a normal person, except possibly that of a paranoiac or other delusional case concerning a topic related to his disorder, such as a crank on the subject of wealth serving as an accident witness for an employee against a large corporation. We have a court decision in 96 Alabama 310 to back this up.

"*One's infirmity may be such as to render it expedient to place him* under guardianship, and even to subject him to personal restraints, and *yet he may be fully competent to understand the nature of an oath, to* observe facts correctly, and to relate them intelligently and truly. A sweeping *rule of disqualification which excludes such a person as a witness* would be arbitrary and unsupported by sound reason. The true reason *for not admitting the testimony of a person non compos mentis in any* case is because his malady involves such a want or impairment of faculty *that events are not correctly impressed on his mind, or are not retained* in his memory, or that he does not understand his responsibility as a witness. When the reason for the exclusion of the witness does not exist, he should be permitted to testify."

This refers principally to the insane. Feeble-minded may not understand or interpret events correctly. But so long as they are asked straightforward questions in simple language there is no reason their testimony should *ipso facto* not be received. One of the lacks of the mentally deficient is imagination, and there might even be less risk than with the normal of their testimony being subject to embroidery or falsification.

The *senile* present special problems. They might be loosely described as having acquired a degree of feeble-mindedness due to ravages of age. Apart from this general diminution of mental acuity, their particular symptoms are poor concentration and inability to remember recent events—of today, yesterday, or last week. Yet older memories, of childhood or even of middle age, may be trustworthy.

5. CRIMINALS. A question as to the admissibility of testimony by a person previously convicted of crime has arisen. The Massa-

chusetts law specified that "the conviction of a witness may be shown to affect his credibility." Note the word *may*. In general a criminal may be less trustworthy than a law-abiding individual, but there is no necessity that every criminal is as such a liar.

6. SUMMARY. It seems to the writer that every bit of possible evidence should be heard, no matter from what source it comes. It is hard enough to get sufficient evidence without ignoring some which is available. Its reliability can be estimated after it has been heard. Most of what is offered by any individual, no matter what his class or mental state, will usually be correct.

II. PSYCHOLOGY IN THE COURTROOM

A. Problems

The law is not cut and dried, nor can human behavior be anticipated completely. When a supposed wrong has been committed and the circumstances do not conform to any existing set of rules, a court procedure may become necessary. This means that opinion will enter, and where opinion figures there is excellent chance for the use of psychological principles. Apart from technical legal considerations there are two things which each party attempts to do: establish certain facts favorable to itself, and convince the judge and jury of the merits of its case.

This quotation points out the necessity of preparing the trial very carefully:

> "A trial at law is simply a competition in persuasion. It is a contest where many influences are brought to bear to persuade a judge or a jury to take certain action. Law is administered through the minds, the consciences, the emotions, and the prejudices of men. It is the task of the attorney to consider all these matters, and endeavor to discover and utilize all the various influences that have a bearing on the problem. If he learns the law, but fails to give attention to something else that causes defeat, his unsupported technical knowledge is of but little value to a client" (6).

Much court procedure strikes the uninitiated as anything but an effort to secure justice. Common sense would suggest that in court the main purpose would be to seek the truth, and everything else should be subordinated to that effort. Once truth is established,

existing law or interpretation from it should be the basis for the final decision. Yet we see prospective jurors and witnesses questioned and browbeaten with less respect than shown to the suspect himself. Rules of evidence are so technical that questions which seem to be both fair and relevant bring objections and are upheld, and at times may even bring a mistrial decision. Continuances, presumably to prevent surprise and to allow time to prepare the case, are used to wear out the other side so the case will be uncontested or dropped—if not for the convenience of an attorney to keep his golf or fishing date!

Elihu Root, another noted jurist, made this statement relative to this point: "Our trial practice in the admission and exclusion of evidence does not agree with the common sense, the experience, or the instincts of any intelligent layman in the country. . . . It is an exceedingly difficult thing to tell the truth, the whole truth, and nothing but the truth, on the witness stand, as any lawyer who has been a witness must realize; and the simplest and best way to get that done is to come as near as possible to allowing people to tell their stories their own way."

Yet we must remember that many of these peculiarities are caused by one of the basic principles of our law—that a man is presumed innocent until proved guilty. So he cannot be forced to testify against himself, and even this refusal is not to be taken in an unfavorable light; the theory is that surprise questions will unduly jeopardize his position. Previous offenses cannot be mentioned, since he is on trial for the present offense only, and is presumed no more guilty at the outset than one with an unblemished past record. Talesmen are excluded from the jury if they have any familiarity with the case, since they might in reading or talking about it have already formed an opinion. This has the obvious defect that jurors who don't read the papers and don't take interest in civic happenings are likely to be below par. And, as an eminent jurist points out (*11*), one experience as a witness or juror leads the better citizen to do all he can in the future to avoid the ill-mannered browbeatings he gets, especially from the cross-questioning attorneys. But if our legal philosophy that it is better to let a hundred guilty individuals escape than to convict one innocent man is to persist, we will have to accept these evils as

safeguards of that liberty. We might make a comparison with our very system of democracy—none of us would want it abolished, yet that system seems to carry along with it the evils of patronage, logrolling, and other minor corruption.

B. Selecting the Jury

The first duty in a trial is to select a jury, twelve persons acceptable to both sides. The attorneys try to discover if there are any initial prejudices, such as refusal to award capital punishment in a first degree murder case, a prejudice against large corporations or foreigners, or a preformed opinion of guilt or innocence Each attorney is allowed to question, is granted a certain number of challenges, and hopes to have included some jurors who are somewhat favorable to his side. The court tries to preserve impartiality, although in some cases this is practically impossible If a Negro is being tried, Negroes are generally kept off the jury, which is manifestly unfair. Yet a member of a minority race is likely to be partial himself. In such a case no jury could be entirely impartial.

C. Bringing Out Testimony

Earlier we studied the relative degrees of accuracy of different types of witnesses. In the trial both the bare facts and the manner in which they are presented are of importance A witness is usually presented by one side or the other. Accordingly, he is usually instructed, or at least reviewed, in the attorney's office before the trial, and is pretty well aware of the questions which are to be put to him. His statements are brought out in such a way that he himself and his judgment appear unimpeachable. To substantiate his character and competence as a witness, questions about his residence, family, place of employment, and citizenship in the city will be asked, not that they have any genuine bearing on guilt or innocence, but to give the jury such confidence in him that the critical points he reports will be given full credence In cross-questioning by the other side, every effort is made to discredit him, or if that cannot be done, sly innuendos suggest distrust to the jury Very detailed questions which no one could answer positively will be asked to show that the witness was unobservant or had a poor

memory, which tends to make his other statements seem of doubtful accuracy.

The form of the question can be varied widely. Burtt and Gaskill (3) list these eight ways:

Did you see a —?
Did you see the —?
Didn't you see a —?
Didn't you see the —?
Was there a —?
Wasn't there a —?
Was the house green?
Was the house green or white?

One may see that each increases in positiveness and suggestibility. A question like the last two on the list is sometimes used to discredit a witness by asking for a description of something which was not there. If one is asked whether a man's mustache is neat or shaggy, it is difficult to recall that he does not have one at all. Burtt and Gaskill experimented with these various types of questions and found that the negative contained powerful suggestion, but that there was little difference between the definite and the indefinite article.

Taft, the jurist mentioned above, recommends strongly after great experience that virtually all formal rules of testimony be abandoned, and that the witness be allowed to tell the story in his own way. Too often, he points out, a competent and qualified witness realizes after his part in the hearing has been concluded that he has given only minor bits of information, and that the crucial points have remained unsaid. But if he attempted to tell his whole story without interruption he is summarily stopped by an attorney, and the judge no matter how impartial is bound by rules of evidence and must sacrifice the truth to the attorney's demand. The witness then is obliged to answer questions largely in true-false or multiple-choice form.

Further, inferences, opinions, and deductions should be given more admissibility. The judge, it is suggested, should be sole authority as to whether a certain bit of evidence contributes valid and worth-while material toward unfolding the truth in the case

at hand. A psychologist or psychiatrist, for instance, might be able to decide quite accurately from second-hand information whether a given individual was normally intelligent or below par, or whether he might be suffering from some kind of mental disorder. The judge should be able to decide whether the evidence itself is reasonably accurate or merely untrustworthy hearsay, and whether the witness is expert enough to make the deduction satisfactorily.

The manner of giving information was tested in an experiment, in which recall for a one-minute movie was measured in various ways (*8*). Three groups were used, as shown in the following table.

	First	*Second*
Group I....	Deposition: 100 multiple-choice questions	Free narrative—written
Group II...	Free narrative	Deposition
Group III..	Controlled narrative, answering questions	Deposition

The greatest degree of accuracy was obtained when free narrative came first. Controlled narration somewhat widened the range of information recalled, but decreased accuracy somewhat. When free narration followed the deposition type of questioning, it was affected by the wording of the questions and accuracy decreased. It is clear of course that this study can have only theoretical significance under available rules of evidence.

In another study, accuracy dropped from 90 per cent for a coherent, connected report, to 60 per cent in answers to cross-examination (*9*).

D. Setting the Stage

Sympathy plays a large part in securing a favorable verdict and cannot be overlooked by the alert attorney. In a personal injury suit the plaintiff will be brought in on a cot or wheelchair, with entrance timed for dramatic effect. After the verdict the injured person may be able to navigate under his own power, as he no longer has incentive for complete invalidism. To quote from Moss (*5*), "The aged mother of the defendant, wearing a black bonnet, with a shawl draped over her bent shoulders, sits sobbing in the courtroom, apparently broken by grief. The wife and small children of the defendant are brought into the courtroom looking the

picture of woe, and are used effectively to produce a sympathetic feeling in the minds of the jury." A case occurred in which two men killed a railroad detective when they were caught robbing a freight car. The single man was convicted, while the married man was acquitted, in spite of the fact that the evidence against both was identical.

E. Pleading the Case

In the courtroom we hear far more emotion than law. Since, as we pointed out, the law is not all-inclusive, the purpose of each side is to bring the opinion of the judge and jury to think that its position has better support in existing and parallel law, precedent, and evidence than that of the other side.

The following is an approximation of the opening sentences of a speech by an attorney representing a furniture dealer. The gist of the case was that the dealer had refused to accept a carload of furniture because (he claimed) it was much lower in quality than the samples from which he had ordered, and because much of it had been broken in transit through careless packing. So much for the setting; we shall not attempt to evaluate the merits of the case.

"Ladies and gentlemen of the jury. I shall not quote the direct law which applies to such cases as this. The learned judge on the bench could do that much more adequately than I. [Flattery to his Honor.] Rather I shall ask you to consider the broader aspects, and see wherein my client would be shamefully mistreated if forced to pay.

"Ladies and gentlemen, you are all residents of this city. So is the defendant. [Obviously an appeal to local prejudice.] The manufacturer from another state is trying to force this man to pay for a poor grade of furniture, much of which is defective. Suppose he were forced to accept it. Unless he shoulders a huge loss, he will be forced to sell it to your fellow citizens, your friends, even yourselves."

Here are a few excerpts from an oration by the prosecuting attorney in a trial concerning a death resulting from a drunken debauchery.

"There sits an old man [the father of the dead girl] burdened with years, listening with us of the prosecution counsel day after day as the doctors for state and defense unfold the story of the terrible injuries in-

flicted on his poor daughter's body before this defendant left her dead. Let me paint a picture of her, the baby of the family, playing innocently around the homestead at —— and now, because of the brutal expression of the passion of this beast here on trial [shouting this] that girl's body lies under the sod of a rural cemetery, in peace at last, I hope. Are you jurymen going to permit such a crime to happen, turn this beast loose, and in effect tell others of his kind to go forth and do likewise?"

For the defense, the attorney said in part:

"Put him in the chair; he won't care after that; he'll be dead. But his mother, that noble woman sobbing there on the front bench—the mother who took in washings to bring that boy up—she will cry bitter tears. It might have happened to anyone—to your own sons, jurymen."

And so on. Not a word of law—not even of evidence or other fact. Merely irrelevant sentimental appeals on both sides. The contest is one of histrionics, not of evidence or of legal scholarship.

III. Insanity and Legal Responsibility

When a crime has been committed, the guilty person found, and the charge proved, some sort of sentence is passed. This may range all the way from a warning or suspended sentence (or probation with a juvenile) through small fines, to jail sentences of various durations, and even to capital punishment. While these in general are scaled in terms of what society considers the enormity of the offense, we know also that the same offense does not always merit the same punishment. There are three principal variables in this. (1) An *habitual offender* is usually punished more severely than a first-time miscreant. (2) The *motive* is important. Suppose your behavior results in the death of another individual, what will happen to you? If it was cold-blooded and calculated murder you will receive life in prison or even forfeit your own life in most states. If the act was in the "heat of passion" or due to gross negligence in say driving an automobile, you may be put in prison five or ten years. If death was as nearly to purely accidental as can be, say a hunting mishap, there may be no punishment at all. Finally, we might add the hypothetical instance of receiving a bounty from the sheriff for killing a wanted desperado.

(3) The third variable is *free will.* English and American law is based on the assumption that a person does most of his acts voluntarily, or through free will, and that he is punishable on this basis. It is assumed that when he commits a crime he has intended to do so, and that if he did not have intent he is not punishable.

If for some reason he does not have normal free will, he cannot be dealt with as can other criminals. He is considered no more responsible or punishable for his deeds than an infant who pushes his dish off the highchair and breaks it, or for that matter than an outsider. Nine groups of circumstances under which freedom of the will, legally interpreted, does not operate are listed: (1) insanity; (2) emotional stress, often termed temporary insanity; (3) obsessions and fixed ideas; (4) drug effects, providing the individual did not take the drug willingly and knowing its possible effects, as a crime committed while intoxicated; (5) feeble-mindedness; (6) youth; (7) senility; (8) coercion, as being forced at the point of a gun to set a house on fire or drive a kidnaped car recklessly; and (9) unusual mental states, as hypnosis, sleep, and somnambulism. (See 78 Kentucky 183: wherein a man sleeping in a hotel lobby was wakened unceremoniously by shaking violently, shot a man, and was held innocent.)

This theory is well summarized in the opinion of a judge in a case of defense through insanity: "In order to commit a crime a person must have intelligence and capacity enough to have a criminal intent and purpose; and if his reason and mental powers are either so deficient that he has no will, no conscience or controlling mental power, or if through the overwhelming violence of mental disease his intellectual power is for the time being obliterated, he is not a responsible moral agent and is not punishable for criminal acts."

We may sum up by saying that for criminality to exist these conditions must pertain: (1) competent age; (2) a good degree of sanity; (3) freedom from overpowering coercion; and (4) a punishable state of mind—i.e., some blameworthy form of intentionality. It is accordingly considered that we have no right to punish anyone who cannot control himself even though he may be aware of the penalty for disobedience.

This whole philosophy is diametrically opposed to present scien-

tific concepts, particularly behavioristic psychology, which tries to leave out such mysterious hypotheses as free will and to include as much as possible under determinism. It is postulated that man's behavior is the result of his innate constitution, his body of past experiences, and the present stimuli operating on him. It is not concerned with the voluntary aspects; only the result counts. For example, we do not care so much whether the murderer is in "normal" control of himself or not, as *whether he did the act and whether he is likely to repeat the act under similar circumstances.*

The present writer has always been thoroughly in disagreement with laws which grant leniency to persons who are said to be abnormal or incompetent in one way or another. If we still held the old revenge theory of punishment there might be some basis for holding the theory. But at present the chief purpose of laws and penalties seems to be to protect society. With this major objective in mind, pardoning or giving a joke sentence to an insane person is indefensible. If society cannot protect itself through state hospitals, offenders must be put in penal institutions.

The worst feature of this defense is that it is generally used as a last resort, merely to escape punishment, whether the defense is appropriate or not. Alienists are brought in and give evidence that the culprit is suffering from some sort of mental disorder. He is not held punishable in the ordinary sense, but is remanded to an institution. If he has enough money, he goes to a private sanitarium, which is often more like a country club. After a few months, when public resentment has died out, he gets the same doctors to swear that he has returned to normality, and he is released. The Thaw case was a shining example of this.

Judgment of insanity is a very difficult matter, and one which should be made only by unbiased experts. It is ordinarily the custom for the defendant and the state each to bring in its own alienists, with resultant conflicting testimonies. The question is left up to the jury to decide. What chance has a lay jury to sift properly the evidence presented in technical terms by a number of psychiatrists? To get around this difficulty Massachusetts passed the Briggs law, which allows the court to appoint a neutral board to render a final decision. Yet in California the accused may demand a lay jury. So a psychiatrist, psychologist, medical doctor, and even

a nontechnically trained hospital attendant, will be excluded, and a very complex problem will be decided by twelve utter amateurs. And such a jury has more than once fallen into a variety of the free-will idea—refusing to convict a man they judge to be insane, feeling it is not his fault, so why institutionalize him?

The legal code has been criticized because it has not differentiated between the various types and degrees of insanity. While legal authorities will point out that the law has been built up by accretion and precedent, and has not always modified itself in accordance with the development of learning in other fields, the situation is perhaps not as hopeless as this criticism might suggest.

Insanity is accepted as a defense plea only in murder charges. Lately it has been urged in some other matters, particularly kleptomania. There is no reason why whatever theory we accept should not apply to the whole scale of misdemeanors. Another complicating factor is that the only critical question raised is whether the defendant at the moment of the crime was able to realize what he was doing. This makes it apparent that a man may be suffering from a serious abnormality and still be able to control himself in regard to personal violence, while another may have only one minor symptom, as delusions of persecution, and yet be legally insane. A definite diagnosis, into dementia praecox, paranoia, etc., is not necessary for court purposes, although it will be necessary in order for the experts to form opinion as to criminal responsibility.

Another difficulty in accepting mental incompetence as a plea is that, from what we know of insanities, there is serious danger of recurrence. Given a new emotional strain and circumstances which excite the individual, a new crime may be committed. There are a number of cases of this nature on record. Feeble-mindedness is, of course, permanently incurable, but as we saw in the last chapter such an individual is rarely vicious.

It seems more likely that a normal person who commits his first crime can be reformed and made a good citizen with proper handling. His lack of orientation may have been due to unfavorable environment, bad companions, poor upbringing, failure to acquire an appreciation of right and wrong, or merely a very trying situation. He may not be inherently vicious in any way and may normally have full control over himself. It always seemed to

the writer that there is *less* reason for removing such an individual from society. The likelihood of repetition is remote.

The question has often been raised whether anyone who commits a serious crime is entirely normal. This question cannot be answered, and any complete discussion of it would call for more space than we can devote. If it is a crime of passion, say assault or rape, he obviously has not normal control over his emotions. The person who under the stress of the moment becomes temporarily insane (which would include fits of anger) is normal at other times. Therefore he cannot be kept out of society as can one who is more or less permanently insane, and yet he cannot be prosecuted for his crime. So we have a victim and perhaps a family left without means of support, and there is nothing we can do about it. It is not so much that we crave revenge as that this possibility of escape (plea of temporary insanity) is open to serious abuse. There is grave danger in allowing such a person normal contacts, as he is likely to fly off the handle again.

Even when the offense was deliberate, such as swindling, embezzlement, or racketeering, his actions have been so consistently antisocial over a long period of time that a very good argument for abnormality, or at least poor balance, could be built up.

The following caution was given to the jury by the judge in an insanity plea by a man who shot a policeman while resisting arrest for robbery (95 N.J.L. 145):

"But I also charge you that in dealing with such a contention you ought to use great caution not to give immunity to persons who commit crime when they are merely morally depraved. You should discriminate between conditions of the mind merely blunted by familiarity with wickedness and yet capable of forming a specific intent to take life and carry it out as stated, and such a prostration or condition of faculties as renders a man incapable of forming intent and carrying it out."

In a Kansas appeal case (37 Kansas 369) the judge urged the original guilty verdict to be upheld, inasmuch as the defendant had committed quite a series of acts showing planning and calculation.

"The verdict of the jury ought not to be disturbed. There is much in the testimony showing design and intelligent efforts to accomplish it. His

consciousness of guilt, his fear and efforts to escape after committing the felony at Blank's house, his coolness and deliberation in three times halting (by threat to shoot) his pursuer, and in firing the fatal shot, and his subsequent recollection of all that occurred during his flight and capture, made an exceedingly strong case showing responsibility, and it is difficult to see how the jury could have reached a different result."

Actually, much civil and criminal law is opposed to the principle of choice and freedom of the will. The act itself is considered, rather than the state of mind of the individual who performs it. If a motorist drives through a stop sign and hits another who is proceeding legally, he is guilty of negligence whether he was absent-minded, deliberately negligent, or drunk. In the last case he does not have his usual voluntary control over himself, although it might be said that he partook of the alcohol of his free will and knew the consequences of overindulgence. One who was intoxicated is usually punished more rather than less severely for acts done in that condition.

Probable results and intent may be held as reprehensible as the actual deed. If one drives around a blind corner at 50 miles an hour, with full knowledge that others who have done so have caused serious accidents, it is assumed that he at least indirectly intends to cause an accident—or to put it the other way, he is not taking due pains to avoid a mishap. Intent may also be judged from the effects on other people. A man who commits a holdup with a pistol and swears later that it was empty or that he did not intend to fire it under any circumstances is still as guilty as if he had fired it, as the victim will behave as if he would be shot if he did not comply. The latter certainly behaves far differently from his probable actions if an unarmed person simply walked into his store and asked for the contents of the cash drawer. Yet if one shoots at and misses his enemy, he escapes with less penalty than if his marksmanship had been better—the intent to kill was there, but the result was not as intended.

Public sentiment makes a decided difference in treatment of the offender. When an attempt was made to assassinate a President, and the Mayor of Chicago, seated beside him, was mortally wounded, the culprit, although obviously a victim of advanced dementia praecox, was put to death almost immediately after the

death of the mayor. We dare say that if he had shot an average person he would merely have been committed. An exceptionally brutal murder will likewise draw more severe punishment than say a sudden killing by a single shot, even though the murderer is very likely suffering some abnormality to be able to do such a deed.

The kind of crime committed may depend somewhat on the variety of insanity (2). This assumes, of course, that there is genuine insanity, which we trust the reader appreciates by now exists only in a relatively small percentage of criminal cases. These tie in, in broad cause-and-effect relationships, with the symptoms of the disease itself.

Paranoia is characterized by *delusions,* which often become persecutory in character. One's enemies are conspiring against him, preventing him from attaining the wealth or power that is legitimately his. Someone on the street happens to laugh—the derision must be aimed at him. The next step is violence, either for revenge or, what is worse because it is unpredictable, striking the first blow. He may have gone through a stage of appealing to authorities, but they, recognizing the baselessness of his accusations, have given him no satisfaction, so he takes the law into his own hands. Other forms of paranoia are relatively harmless, although they may be a nuisance, such as an individual flooding the newspapers with letters on all conceivable subjects, writing to prominent men, or to executives of corporations of which he may or may not be an employee. These always have the danger of eventual violence, so cannot be completely ignored.

Dementia praecox or *schizophrenia* may account for some of the most coldly calculated and brutal crimes. In fact almost any time one sees a combination of rape, mutilation, and murder, or a senseless (not for revenge) brutal murder, he can virtually depend on there being a diagnosis either of advanced dementia praecox or epilepsy when the guilty person is caught. The reason for the first diagnosis is found in the two main symptoms, described previously in Chapter XXVIII, of poverty of emotions and withdrawal from society. One feels no remorse either at time of deed or afterwards. "The accused sat in court showing no emotion and paying little heed to the trial, and was impassive when sentence

was pronounced" is a typical newspaper description. Hope for cure is unfavorable. Epilepsy is mentioned in the second paragraph below.

Manic-depressive insanity, we will recall, is principally characterized by shifts between excitement and depression. The chief criminal concern is due to the extreme excitability, to the point of quarrelsomeness, while in the manic state. In the depressed phase one might suspect tendency toward suicide, but this is not so, perhaps partly because the patient is not for any lengthy period in this phase. The schizophrenic is more likely to do violence to himself or others. Possibility for cure is better than with dementia praecox, and ordinarily the victim does not become progressively worse.

Four *organic disorders* might be mentioned quickly. In *paresis,* advanced syphilis with degeneration of the nervous system, assault and sex crimes may occur, as well as those typical of delusions. In fact delusions of grandeur are among the first symptoms of paresis, and are not harmful unless they lapse over into those of violence. *Epilepsy* may cause a crime of great violence during a seizure, with no memory afterward. Also the personality, even between attacks, exhibits major changes—known as the epileptoid personality, characterized principally by violent temper, sullenness, cruelty, lack of sexual control or actual perversions, impulsiveness, obstinacy, irritability, inconsistency (*14*). *Senile dementia,* possibly partially due to diminished blood supply to the frontal lobes, results in loss of recent memories (not a crime in itself of course), confusion, and petty stealing and sex attempts—in spite of the age of the victim. *Melancholia* is a severe and long-continued depression, typically afflicting women during and shortly after the menopause, but by no means confined either to this age or just to women. Suicide is the danger, rather than crimes against others or against property.

Kleptomania is an interesting example of a pointless crime of purely psychological origin. Tied up with our discussion of legality, it might be informally defined as an irresistible impulse to steal, with no regard to the possible use of the object or one's ability to pay. For instance, an elderly millionnaire spinster might conceivably steal a baseball glove. The individual is psychopathic, not a

true criminal, and while cure is rather difficult because of the senseless character of the disorder, fine or imprisonment does no good. Free will can be said not to be operating, since the act is of such compulsive nature. Socially speaking, kleptomania is not of great consequence, because there is no danger of violence or sex involvements, and even the thievery is of objects of no great value. *It is not of calculated nature, as is car stealing, jewelry robbery,* or swindling. Store managers and detectives usually are acquainted with all the habitual kleptomaniacs in the city and watch them, either relieving them of their "take" when they attempt to leave the store, or simply writing them on a charge account and presenting the bill to the family.

IV. Theories and Practices of Punishment

A. Theories

For a law to be more than a mere recommendation there must be some penalty attached to failure to observe it. (The Wisconsin legislature passed a law requiring restaurant owners to serve one ounce of cheese, an important local product, with every full meal served in hotels or restaurants, but since there was no fine for failure so to do the law could be winked at.) Just what penalty to fix is the next question. This depends to a large extent on the theory of punishment one holds.

1. REVENGE. Revenge is the oldest theory, and is the one expressed in the law of Moses in the words "an eye for an eye, and a tooth for a tooth." It implies that an injury calls for like and equal reprisal. This theory is no longer held, at least by criminologists and other experts on the subject, although capital punishment and the handling of war criminals certainly smacks of it. It is too crude, and leaves out many extenuating circumstances which should be taken care of by individual punishments.

2. PROTECTION OF SOCIETY. This is the view which is most generally held at present, and seems to be the most workable theory. Laws are provided so that the maximum number can enjoy the maximum amount of freedom. If one could not trust his person or property without having to be constantly on the lookout, as in a primitive frontier society, life would be very strenuous and un-

happy. If certain people constantly and severely menace this peace of mind, they must be denied ordinary full social freedom. The more severe the crime the longer one is separated from society. It is also assumed that punishment will be so unpleasant that it will deter him from repeating the offense, and that knowledge of penalties will keep the majority of normally balanced individuals from breaking the law.

3. REFORM OF THE INDIVIDUAL. Reform of the individuals is the cry of some. The child is made to behave better by spanking him, the older person is reformed by fine or incarceration. This theory is behind the shortening of sentence for good behavior. It is assumed that one has reformed sufficiently so that he has demonstrated his capacity to live a law-abiding life, and that it would be an injustice to keep him confined any longer. This provision also provides an incentive for early reform and for good conduct in prison.

It is apparent that before this reform can be made the major objective of imprisonment a number of changes in institutional practices must be made. Rather than being reformed, many individuals emerge from their first sentence with a greater knowledge of crime and with a bitter attitude toward society. A first offender may be mixed in with recidivists who have committed most of the offenses in the book. Present methods of punishment tend to make the criminal *more* rather than less likely to remain a professional criminal.

B. Punishment as a Deterrent

The penalties attached to criminal offenses and torts were not established with the expectation that the laws would necessarily be broken. Usually they are many times as severe as the crime, if such can be estimated, with the hope that people will be deterred from violations. Is it worth while to steal a watch if you may be subjected to a heavy fine, be put in jail, and become an object of social disgrace such as losing one's job and friends?

Yet it is apparent that such threats and penalties do not deter everyone. Perhaps they do materially deter those in responsible jobs and good social position. Perhaps each of us would steal, refuse to pay our bills, or violate traffic ordinances if we did not

realize that for us the possible penalty is hardly worth the risk to our material and social position. But no penalty entirely eliminates crime. Sheep-stealing in England and horse-stealing in our own West were punishable by death, but violations were not stopped. Murder is not less frequent in states having the death penalty than in others which do not inflict so severe a punishment. This observation again suggests the argument that no person with normal balance would commit such a serious crime as murder, knowing the penalty if detected.

Probably the critical point in prevention of crime is the degree of certainty of detection. Regardless of the threatened penalty, it will not deter everyone as long as the chances of detection and conviction are slim; in this country at present only one murder out of a hundred is followed by actual conviction. England is reputed to have a much smaller ratio of murders than occur in this country, and this is explained on the basis of speedy detection and a much greater certainty of justice. Here even when the apparently guilty person is caught, justice is impeded by all sorts of technicalities, witnesses may be bribed or intimidated, newspapers and other influences confuse witnesses' testimony after months of waiting, insanity is used as a last-resort excuse, and misguided sympathy is used in an effort to excuse people from the most brutal crimes. It is particularly unfortunate that technicalities which were originally introduced to protect innocent accusees have been warped to defeat the true intent of justice.

Threat of sudden and drastic punishment for crimes will act as a serious deterrent. It was reported that in Texas an effective stop was put to bank holdups by posting a sizable bounty for the capture of a live bandit, with double reward for a dead one. Every citizen was given an incentive to help the law, and no misguided sympathy could develop.

C. Modified Sentences

There are two ways of looking at punishments. First, a crime has been committed, let there be a standard punishment. Second, an individual has engaged in antisocial conduct; how is society best protected and the culprit most likely reformed? We note that most crimes of what we might term "middle-range" nature have

quite a variation in their penalties. Such a range is listed as "Fine of not less than one hundred nor more than one thousand dollars, and imprisonment of not less than three months nor more than two years, or both." The jury decides whether the suspect is guilty, and sometimes guilty of what (first- or second-degree murder, or manslaughter, for example). The judge then passes sentence. If he feels the offense is particularly glaring or is evidence of hardened criminality, he may assign the maximum possible punishment. For a first offender or in event of what he considers extenuating circumstances (petty thievery on the part of an unemployed person, assault upon a person who is paying too much attention to one's wife) he may give the minimum possible penalty.

Probation or suspended sentence may be given a first offender who has a good record otherwise and seems likely to go straight in the future. A prison sentence often does more harm than good, creates a blot in the individual's history, and may not be necessary to deter him from future wrongdoing. He is not released without obligation or responsibility, however. The sentence hangs over his head, but is not passed if he behaves himself for say a year. He may have to report to the judge weekly or monthly to show that he is living a satisfactory life and is remaining within the jurisdiction of the court. This theory is excellent, if applied systematically, but is open to abuses. The perpetrator of one of the most ghastly murders in recent years was found to have been out on parole after a relatively minor offense in a city half way across the country. He had not reported for months, yet no attempt had been made to check up on his delinquency. If he had been traced two lives might have been saved—his own and that of his victim.

Juvenile offenders are treated differently from adults. They are not considered old enough to have criminal intent, so are not truly criminals. There is no formal accusation, testimony, or trial by jury. If convicted and if confinement seems advisable, they are sent not to prison but to a reform school. Probation avoids definite sentence, but keeps a check on the juvenile.

D. Future of Discharged Convict

One of the greatest reasons for avoiding and modifying sentences in deserving cases is that a prison record places a serious and in-

eradicable blot on a man's history. While stories of the police hounding a man who has made one slip are greatly exaggerated, it is true that an ex-convict is distinctly handicapped socially and economically. The damage increases as one goes up the scale of occupations, reaching its peak in such professions as medicine, teaching, or ministry, where one may be rather widely known and where a record would almost certainly negate any future chance of reemployment in a field for which he has spent years of preparation. Such an individual might as well change his occupation and residence entirely, and start anew at some new vocation. One conviction for say assault or driving while intoxicated in effect becomes a life sentence in literally separating him forever from his accustomed environment. By contrast, those in occupations enjoying lesser social prestige may find a prison sentence little more than an annoying sort of "quarantine" which keeps them from circulating for a certain length of time.

We do not mean that offenses should be condoned or pardoned just because of the probable hardship on the individual. A person aspiring to a higher profession must think of all such consequences and be willing to accept greater social responsibilities before entering his profession. But present tendency is not to inflict disproportionate punishment in a case which does not seem to be serious and which will probably never be repeated.

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PART VI

PRACTICAL PERSONAL PROBLEMS

CHAPTER XXXI

PSYCHOLOGICAL FACTORS IN MARRIAGE

I. Seriousness of the Problem

The most intimate of friendships, love, up to the last decade or two had been considered too intangible a thing to think of in terms other than emotional. Lately, however, possibly spurred on by rapidly mounting divorce rates, marriage clinics and actual scientific research have sprung up. Some of the clinics handle problems of marriages which are not going smoothly; others, including many of the same ones, cater to couples thinking of marriage who wish advice and hope for verification. These clinics, usually run by a psychologist, sociologist, or doctor, have much lower than average divorce rates among their clientele, although it might be argued that those who seek out sound advice are good risks in that they show by their actions that they recognize that marriage is a serious problem and are willing to meet the problem more than half way. And the clinics have reinstated on a sound basis many marriages which have shown signs of going on the rocks.

Two very thorough books, written by psychologists, must be mentioned. Dr. Terman of Stanford University published *Psychological Factors in Marital Happiness.* It deals with the personal and psychological make-up of several hundred couples, happily married, not so happily married, and divorced. One can study the factors which contribute to a happy marriage, and which ones are likely to lead to friction. Dr. Adams' *How to Pick a Mate,* from his clinic at Penn State College, deals with somewhat the same prob-

lems, plus many sound practical recommendations before and after marriage. This book is clinical in approach, using intensive studies of hundreds of individual cases.

There are a number of other excellent books, written from standpoints both of experience and common sense, but one must be cautioned to distinguish sharply between proven fact and rule-of-thumb recommendations. We must distinguish not only between conjecture and fact, but also between absolute and relative. For example, frequent cautions are raised against marriages involving racial and religious mixtures; and in fact Catholic-Jewish matches have a relatively high divorce rate, yet three out of four such unions are successful. However, realizing the potential danger, if the two face the likely risks in advance and settle several important problems, particularly the religious and educational handling of children, such a mixture need not be an insurmountable obstacle to a happy marriage.

In this brief chapter we realize that we are merely scratching the surface of an important and fascinating topic which would require whole books to discuss fully. We shall content ourselves with introducing some of the more vital problems, citing a few facts, and hoping that the reader will start thinking and inquiring further into the topic. We are likewise not touching in any way upon the biological or moralistic aspects of sex behavior, beyond making the simple observation right now that society has found that premarital restraint and monogamy after marriage work for the best. Marriage research bears this out.

II. Are You Ready to Marry?

Biologically we are mature at 14 or 15, yet marriage is, and we all agree should be, postponed several years for psychological reasons. Most prerequisites of marriage are matters for individual decision, but some involve general principles.

Age, personal maturity, and educational and vocational status are probably the most important factors. First, *are you truly mature enough* to take on the responsibilities of marriage, including caring for a possible child in a year or so? If you hate to think of giving up parties, dating various persons, and other privileges of the single person, you are giving your answer in the negative.

Second, are you at or near the culmination of your *educational plans?* In the ecstasies of new love, you may think nothing is of importance but your soul mate, and may be eager to quit college or give up plans for professional school. Such a sacrifice may be a source of conflict in later years, feeling that you have given up your greatest ambition for this girl, or your hurry to get married caused this man to drop his long-held plans. Even if you keep on in school, it will be with little money, and it may be distinctly hard on the wife. She has no money for little pleasures and luxuries, while the man is immersed in his studies, has contacts with school friends, and probably gets some fun in the gym or in intermural sports. Any college campus has seen dozens of young wives become neurotic and men wind up their education with less desirable personalities than they had when they began, solely because of excessive financial stringencies due to attempting both marriage and education.

Vocational advancement is a personal problem, and outlooks change decidedly with the times. During the 1920's only a rare undergraduate and just a few graduate students were married; further, most had set fairly definite monthly incomes as future standards before they would permit themselves to fall in love. In the 1930's most graduate students were married, but only a few undergraduates. Now, due largely to veterans' educational assistance, even freshmen are family men. Wars have always led to earlier and hastier marriages and an increased birthrate. While old-timers may bewail the trend, pointing out that in their times when a man took a wife he was setting himself up as an adult and was ready to support himself completely, there is no question that earlier marriage and earlier propagation are eugenically sound. Scientists have long bewailed late marriage, late reproduction, and small families among the more intelligent and better educated. It has been pointed out that in agricultural days a boy and girl got married young, moved into a tenant house on the farm, and assisted parents with no more assets than healthy bodies—so why should not modern parents help equally in setting up in business? The writer can attempt no evaluation of these arguments. We urge, however, that one should survey his ideals, ambitions, and

material prospects before plunging himself and another into an uncertain future.

Have you taken a self-inventory? Recognizing that marriage is a serious proposition and like any other job something to be worked at, one should take stock of himself and of the general facts of marriage. Ask yourself these questions:

Am I sufficiently independent of family ties so that my mate will come first? High up on the list of obstacles to marital happiness with both sexes are in-law problems. We are not suggesting that one has to make a complete break with his or her family at marriage, but the man can't plan his job nor the woman her arrangement of furniture to suit their mothers. Before letting oneself fall too seriously in love, he should make sure the other person won't be parentally dominated even into middle age. This is not an infrequent condition.

Do I have any habits which will interfere with marital success, in general or with my particular mate? One can consult literature on causes of unhappiness and actual breakup and evaluate himself honestly. An only child may not necessarily be spoiled, but he is accustomed to making his own decisions and may have some trouble teaming up in partnership. So is a man or woman who has worked and supported himself a number of years prior to marriage. He will have to recognize in advance a tendency to be self-centered and determine to make a conscious effort to combat such tendencies. Likewise, do I have a bad temper, do I insist on having my own way, am I habitually tardy or sloppy, do I have grouchy moods, do I have any health problems which a doctor, dentist, or simply better living habits can correct?

Can you face sex frankly? While sex activity is not the major attribute of marriage, it is of undeniable importance, especially in early adaptation to living together. Inhibitions, fears, and prejudices instilled earlier to keep one on the path of proper conduct are not automatically dispelled by a fifteen minute marriage ceremony. Most people, particularly girls, are not well informed on the subject, and information picked up from associates is likely to be distorted. That sex is not an instinct that nature gives to man ready to exercise to perfection on proper occasion is evident from the files of any marriage clinic. Inadequate and incorrect informa-

tion, unhealthy attitudes, and unhappy initial sex experiences can color marital happiness for a long time or even permanently.

A psychiatrist would say that the unconscious needs to be purged. The unconscious, we saw in Chapter XXVIII, contains repressed materials, including attitudes and prejudices, and it is very tenacious in holding on to its contents. This is why we said that a marriage ceremony cannot completely remake one's attitude toward sex. Inhibitions which have been built up for ten or more years just cannot be relieved so quickly. The period of engagement will help bridge this transition, but definite sex instruction may be necessary in a good many cases. If your parents can't or won't talk it over with you, consult a doctor or psychologist. If you have not purged your unconscious sufficiently to look at sex straight, it is better to postpone marriage until you have made a satisfactory adjustment.

Do you know what you want in a mate? Love is not a blueprint proposition, but it is our suggestion that anyone should form a general idea of the individual that will suit him or her. Of course, we are not referring to such trivialities as the "tall, dark, and handsome" ideal, but rather to how much premium you place on such factors as these:

Appearance
Education
Family background
Health and vigor
Intelligence
Occupation and success in it
Personality
Religious and political affiliation
Residence (necessitated by husband's job)
Special hobbies and interests
Special skills and experience (cooking, golf, bridge)

Some of these traits may be inconsequential to you; others may be of paramount importance. All of them make a difference in outlooks and attitudes. If you are vigorous and robust, and your friend is not so luckily endowed, the difference may be a constant source of annoyance. Religion often makes much more of a difference than an hour on Sunday morning, and may become a crucial issue with

children, especially in a mixed marriage. Political differences may either be respected by each, or may become serious bones of contention.

If a girl, have you respect for your suitor's vocation and the duties that go with it? If he is or plans to become a doctor, will it bother you unduly to cancel at the last minute plans for a social evening when an emergency case comes up? If so, you'd better look for a businessman with more predictable hours. If he is a teacher, and your father a hard-headed businessman, will it always be in the back of your mind that your husband is an impractical theoretician? If he is a public servant and has evening meetings two or three nights a week, are you self-reliant enough to take care of yourself alone or with friends of your own choosing? If he is fond of fishing or has always spent his vacations in outdoor activities, and you have done your "roughing" in a sedan on concrete roads and de luxe hotels, will you either adapt or let him go off by himself? Remember marriage never reforms or changes an individual's basic outlook on life. One must adapt or plan separate activities in some ways. Your outdoor-loving husband will compromise with you and take you to some shows and to the city, but his two-week vacation is to fit him for the next 50 weeks of work, and if he is not rested it will be as much your loss as his. This may sound unfair for the woman, but in our society his job determines where you will live, many of your friends, your kinds of entertainment, hours you keep, and the social circle you move in.

When we started this brief section on what you might expect in your mate, we did not intend to suggest in any way that you should evaluate an individual on an absolute scale. *The emphasis is on suitability, not on mere excellence.* The writer has seen a number of college girls with no special talents or attractiveness, who seem to assume a God-given right to expect a combination of Mr. America and All-American halfback, honor student, president of his class, and accomplished musician and dancer. The reverse is true as often; a man with no great talents or accomplishments thinks he should attract the top woman in a thousand. As in vocational choice, the effort should be to match qualifications, background, and other attributes, with little regard for other than suitability to one's own characteristics.

Are you genuinely in Love? is a final question. One must distinguish genuine love from temporary infatuation, or just being in love with love. Some people become anxious to get married, and may seize upon and idealize the first person superficially suitable. College girls upon graduation, those who have worked the number of years they may have set as their stint, or young men just discharged from the service or in possession of a good job, are in grave danger of making a mismatch.

Being in love is an emotional state, and no certain test can be applied. One naturally thinks the other is wonderful, yet it is no sign that he is not really in love if he can see a shortcoming or two in the other. In fact, we might suggest that if he does see a deficiency, and still wants to marry, the love is on sound ground. You can check community of interests—not just that you are both fond of dancing or bowling, or symphony concerts or poetry. Married life is too complex for one interest to guarantee congeniality. The other extreme—all interests in common—is probably unattainable due to the simple fact that there are sex differences. Love is based on many traits, it grows with contact rather than makes a sudden appearance, one enjoys simply being in the company of the other, it makes one look toward the future and not merely at the immediate present and provides at least the man with motivation to get ahead in life whereas mere infatuation distracts (like adolescent daydreaming).

Happiness in Marriage

The factors which go to make up happiness in marriage, if measurable or identifiable, should contribute to selection of one's mate. ~~We hear a protest: Is Science now trying to tell me whom I should marry? Not quite, but research has spotted factors which lead to happiness and others which predispose to marital trouble.~~ If a couple satisfies most of the criteria successful marriage is likely, and if disagreements among criteria are common the union has poor probability of marital happiness. Suppose on top of this difference there is 15 years' separation in age, one is on a professional level and the other failed to finish high school, and one wants a large family while the other doesn't care for children. Certainly

this marriage is doomed, yet countless couples have ignored such warning signs and hoped that their infatuation would triumph over even such fundamental discrepancies.

It is perfectly possible to prevent yourself from falling in love with someone who is decidedly not matched to you. It is much better discovered now than after a few months or a year of marriage. One can have respect, admiration, and great friendship for an individual, all the while realizing that marriage is not wise. Love, once established, can create an emotional shock if the whole thing is called off, but shock is easier to bear than years of incompatibility.

What of the "one and only" hypothesis—that there is only one suitable person on earth and that if one does not happen to meet the other he is doomed to singleness or an unhappy marriage? Marriage counselors discount this theory. Even within the confines of the United States, the chances of meeting one's soul mate are infinitesimally small, and probably 999 out of 1000 marriages would be compromises. There is probably no perfect couple, and probably there are dozens of the opposite sex in one's general environment with whom one would be happy. Put it this way—a college senior could probably marry successfully at least half a dozen out of 100 girls in his class. Naturally there are similarities in age, education, intelligence, and certain phases of environment in favor of happiness, so the probability is far above chance.

Dr. L. M. Terman, of Stanford University, in his monumental work, *Psychological Factors in Marital Happiness*, published in 1938, reports in great detail his studies of 792 couples in California cities and towns in the middle 1930's. The subjects were of upper and upper middle socioeconomic status and consisted of 126 happily married couples, 215 married not so harmoniously, and 109 divorced pairs. Data secured were background (family, parent's income, childhood life), personal items (age at marriage, occupation, religion), personality and interest test scores, and sex adjustments.

A great contribution was Terman's development of a scale of happiness, derived through complex statistical procedures. Upon the validity of this scale depends the practicality of applications of

Terman's data. The scale is shown in Table 77, and certain fundamental results are presented in Table 78.

TABLE 77. *Weights for Happiness Score*

Item	*Answer*	*Score*
Outside interests together	All	7
	Most	5
	Some	3
	Very few	1
	None	0
Average amount of agreement on 10 items[a]	1. Greatest agreement	8
	2.	6
	3.	4
	4.	2
	5.	1
	6. Least agreement	0
Settlement of disagreement	Self gives in	0
	Spouse gives in	2
	Give and take	5
Regret of marriage	Frequently	0
	Occasionally	4
	Rarely	7
	Never	10
Choice of life to live over	Marry same person	10
	Marry different person	0
	Not marry at all	0
Contemplation of separation or divorce	Yes (for either)	0
	No (for both)	8
Rating of happiness of marriage	Extraordinarily happy	15
	Decidedly more happy than average	12
	Somewhat more happy than average	9
	About average	6
	Somewhat less happy than average	3
	Decidedly less happy than average	0
	Extremely unhappy	0
Admission of present unhappiness	None	11
	1 year or more of unhappiness	0

TABLE 77.[a] Weights for Happiness Score (*Cont.*)

Item	*Answer*	*Score*
Total complaint score[b]	0	13
	1-2	11
	3-9	9
	10-19	6
	20-29	3
	30 or over	0

[a] Handling finances, recreation, religion, affection, friends, children, dealing with in-laws, etc.
[b] See Table 79.

TABLE 78. *Happiness Scores* in Terms of Three Sample Factors

A. Age at Marriage

Husband		*Wife*	
Below 22	66.2	Below 20	65.0
22-23	69.4	20-23	69.4
24-27	67.8	24-27	69.4
28-31	68.9	28-31	69.5
32-35	67.6	Above 31	71.0
Above 35	70.8		

Very young marriages are unfavorable, but the data fail to support the contention that those over 30 cannot adjust.

B. Occupational Level

	Husband	*Wife*
I. Professional	68.6	71.4
II. Executives and managers	69.7	71.0
III. Retail and skilled	66.7	65.5
IV. Agricultural	72.0	71.5
V. *Small business, clerks, semiskilled*	66.4	65.5
VI. Apprentices, etc.	73.8	72.1
VII. Unskilled labor	71.3	70.5

Groups IV, VI, and VII are too small to be reliable. Data do not show that occupation, intelligence to enter it, income probable from it, or social position created by it have anything to do with happiness.

TABLE 78. Happiness Scores in Terms of Three Sample Factors (*Cont.*)

C. Length of Engagement

	Husband	*Wife*
0-2 months	64.7	66.5
3-5 months	66.8	70.3
6-11 months	69.2	68.7
1-2 years	69.7	71.8
3-4 years	71.1	71.5
5 or more years	73.4	72.4

Longer engagements seem to help. The same is true of length of acquaintance prior to formal engagement. This does not make certain that hastier marriages will not be successful, but the careful person will be more leisurely.

Tabular data were similarly presented for literally dozens of other characteristics, which we shall attempt to summarize extremely briefly, with the exhortation that if you wish full details and the original author's interpretations, you will be wise to consult that book.

A. Family Factors

1. CHILDHOOD HOME. "The happy subjects more often came from happy homes, were fonder of and had less conflict with their parents, were less frequently punished, were disciplined more wisely, were less often rebuffed or punished because of their early sex curiosities, and less often developed unwholesome attitudes toward matters of sex."

2. PARENTS' HAPPINESS. One of the most crucial factors toward stable marriage is for both partners to have happily married parents, whether this is due to their personalities or to specific attitudes toward their own marriage. We saw in Chapter XXIX that children of divorced parents were four times as likely to become juvenile delinquents; they also are poorer marriage risks.

3. PRESENCE OF SIBLINGS. Only children were only half a point lower than those from larger families, but if both were onlies happiness scores were 10 points below the mean.

4. SEX INSTRUCTION. Those who had received inadequate or no sex instruction tended to have lower happiness scores after marriage—which of course would be years after such instruction should have been given. There was little difference among those receiving satisfactory information whether it came from a parent, teacher, or doctor, or even other adults, but according to scores on the scale it was a poor source if it came from other children. Those who had been rebuffed or met with evasion had 10 points lower scores than those who had been dealt with frankly. Interestingly, those who said they had had no special curiosity about sex had as high scores as the last-named group.

B. Personal Factors

1. AGE AT MARRIAGE. Age at marriage except for men under 22 and women under 20, makes virtually no difference. The younger party tends to be less happy if the husband is any younger or the wife 9 or more years younger, although we must emphasize that there is only a trend and not a certainty.

2. INCOME. Income as such makes little difference, contrary to ideas that financial stringency leads to conflict, or (as suggested by the news) that wealth leads to infidelity and multiple marriages. What is more important is how expenditures are managed. Presumably two prudent individuals, or two spendthrifts, might get along sympathetically, but not one of each type.

3. CHILDREN. Children, or absence of them, seems to make little difference in happiness score. Perhaps in individual cases frustration is a factor, as seen in lower scores for childless women beyond middle age. The statistics, however, controvert the popular assumption that there is marital danger in not having children. Perhaps those who do not desire children are not showing an adult attitude, whereas those who wish them but are not so fortunate as to have them can be perfectly happy.

4. EDUCATION AND MENTAL ABILITY. In both categories the principal finding was unhappiness of the wife if the husband's education or mental ability was materially lower than her own. If husband was distinctly superior there was no handicap to harmony.

5. BACKGROUND DIFFERENCES. Background differences may be sources of friction, since each has different preconceptions of the

mate's functions and duties. A case is cited of a girl from an aristocratic southern family, who had had a maid to pick up even her clothing, and who married after a brief courtship a midwestern farm boy whose mother had helped with the milking and other chores. One can readily imagine the conflict that was inevitable.

6. LENGTH OF ACQUAINTANCE PRIOR TO MARRIAGE. Length of acquaintance prior to marriage is directly related to happiness score. The same is true with formality of first acquaintance (say meeting at a church social rather than a "pickup"), and with length of engagement.

It has been suggested that college romances start under good omens, since one sees his inamorata at various hours of the day, in a working situation, and with each other as primary amusement. This contrasts with the working person who sees the other only after work or on a week end, under artificial entertainment and money-spending situations.

C. Sex Factors

As Dr. Terman says, "There is more to marriage than the sexual embrace." Yet one can minimize as well as maximize sex. It both creates and symbolizes adjustment between two individuals. Also, attitudes can and do become modified. One who has been reared not only strictly, but prudishly, can make gradual adjustments, even if for a short time after marriage the sex portion seems repugnant.

1. ADOLESCENT ASSOCIATION WITH OPPOSITE SEX. There is little difference whether one has had a great many dates, few, or hardly any, so far as later marital happiness is concerned. This shows that wide experience is not necessary to find out what one wants.

2. FREQUENCY OF INTERCOURSE AND HAPPINESS. Frequency of intercourse and happiness shows direct positive correlations with both sexes, but again the cause and effect are undoubtedly circular. With happiness, intimacy may occur more often than in the case of an ill-mated pair. As might be suspected, happiness is greatest for couples whose desire for physical expression is relatively equal.

3. SEX EXPERIENCE PRIOR TO MARRIAGE. Happiness scores were highest for those who claimed no sex experience before marriage, second best if it was with future spouse only, and progressively

lower as the number of affairs increased. The differences were not as great, however, as moralists would like to see.

Pitfalls of Marriage

Divorce may be likened to turnover in industry, and it has the same two major causes: selection of mate, and trouble arising after marriage—the latter similar to personnel problems after employment.

Many potential pitfalls in marriage have already been pointed out in reverse fashion as we discussed happiness. If we mention that a fairly lengthy acquaintance increases probability of happiness, then we are suggesting that a short acquaintance, say less than six months, is dangerous, even if not necessarily fatal.

A. "Nine Dangerous Characters"

Nine dangerous characters are ones which, according to Adams, are prone to make a marriage intolerable. These are:

1. *The jealous mate*—a fifth of quarrels and half of divorces are due to jealousy. He or she is always suspicious, quick-tempered, disagreeable, always on the lookout for something wrong.
2. *The mate who wants to improve you*—one should take his spouse for what she is, not what he wants to mold the other into being. Nagging to improve sets up constant friction and conflict.
3. *The nervous mate*—marriage doesn't cure neuroticism or maladjustment; it may partially solve a problem or two (such as sex repression or conflict with parents) but it does complicate life and thus introduces many more new problems than it removes.
4. *The financial critic*—quarrels over money are five times as numerous as over rearing of children.
5. *The alibi artist*—beware of the habitual excuse-maker.
6. *The escapist*—drinker, hermit types, make unsatisfactory mates.
7. *The disorderly mate*—note appearance of living or working quarters, handling and scheduling of daily routine.
8. *The mate with clinging relatives*—will they move in on you, or demand that you live with them? Will one of the mothers insist on arranging your furniture, curtains, etc.?
9. *The flirt*—even when engaged does he or she have a roving eye? Marriage rarely changes such a person into a "one-man dog."

B. People Who Should Not Marry at All

Certain physical defects which may affect marital life, earning capacity, or be passed on to children will disqualify some people. Other personality defects, some mentioned among the nine above, will cause great risk to anyone who marries them, not just to certain individuals. These are such as mental incapacity to earn adequate money, vocational instability, criminality, drug addiction, record of more than one divorce. Relative to the latter, the more divorces a person has had, the poorer risk he is for the future. Scientific search for causation looks for common circumstances, and while one divorce may be the partner's fault, several cannot all be tough luck. The writer is of the opinion, apropos of Hollywood and certain other social sets, that "three strikes is out," that if three marriages have ended badly the individual should be permanently disqualified as having demonstrated his unfitness.

C. Mixed Marriages

Mixed marriages are dangerous enough so that Adams, from thousands of clinical cases, feels warranted to devote an entire chapter to them. He says:

"Marriage [depends upon] the congeniality of the two persons. This congeniality must be built upon the things they have in common. The more things they have in common and the fewer the differences, the greater the likelihood of congeniality. . . . Even where couples are highly compatible far-reaching adjustments must be made. When to the normal differences you add fundamental differences in background, the sheer problems of adjustment will add a severe strain to the union. . . . Suppose the two people do bridge the gulf between themselves. There will be great differences between the two sets of parents that may present problems. And there will be the differences between their two sets of friends. No couple lives completely alone" (*1*, pp. 139-140).

You may recall a play founded on one sample of this theme, *Abie's Irish Rose,* a comedy, but between the lines a potential tragedy, of a couple madly in love with each other, but finding virtually insurmountable complications in families, religions, customs.

Adams includes not only such differences, but warns against

wide discrepancies in age, education, intelligence, economic background, social culture. The latter, by the way, accounts in large part for rifts in marriages of servicemen to foreign brides. The bride brought to this country may have had to learn a new language, acquire an entire new set of friends, and adjust to a new pattern of living.

D. Family Crises

Without expansion, here are some common causes of family crisis:

Presence of children, with resultant splitting of affection between the couple.
Lack of children—boredom on part of couple, or friction if one member greatly desires offspring.
In-laws—not only domineering, but aged relatives upsetting home.
Death in immediate or near family.
War—departure, living apart, difficulty reuniting.
Lengthy illness.
Income failure—husband broods, wife nags.
Wife fails to progress and grow up with husband.
Change of residence due to job transfer, loss of friends.
Unfaithfulness—may be result as well as cause of unhappiness.

In fiction when a couple has gone through a crisis and remained together, their marriage has been "purified by fire," and they find themselves even more compatible than before. This would be ideal, but is rarely so. There may be temporary improvement, but a new disagreement usually ensues, followed by a lower level of reconciliation, and ultimately a gradually deteriorating relationship.

It has been pointed out by sociologists that the family structure is decidedly weakened over that of the typical family of half a century ago. Many live in a rented small house, ~~duplex, or apart~~ment rather than a large house or farm owned by themselves. Fewer elders, maiden aunts, and grandmothers live with them. Birth control has delayed and rendered less numerous the children. Instead of starting the day unified with a family breakfast, one by one each straggles in to grab a quick coffee ~~and~~ doughnut. Children practically at maturity have no chores, and even feel put upon if asked to hang up their own clothes.

On top of this seems to be a happy-go-lucky attitude toward marriage and divorce. Grandfather got married leisurely, and for keeps. Now we seem to marry impulsively, and run to a lawyer when the first ripple breaks the calm surface. Divorce multiplied seven-fold from 1870 to 1940. Obviously life has not become that much more complex.

E. Sources of Marital Conflict

Terman collected complaints of husbands and wives, the most frequent of which are listed in Table 79.

TABLE 79. Leading Complaints of Husbands and Wives

Husband's Complaint	*Rank Order*	*Wife's Complaint*
Insufficient income	1	Insufficient income
W's feelings too easily hurt	2	In-laws
W criticizes me	3	H nervous or impatient
In-laws	4	Poor management of income
W nervous or emotional	5	H criticizes me
Poor management of income	6	Preferences for amusements
Lack of freedom	7	H does not talk things over
Preferences for amusements	8	H is argumentative
W quick-tempered	9	H quick-tempered
W nags me	10	H does not show affection
W tries to improve me	11	Lack of freedom
Respect for conventions	12	H selfish and inconsiderate

A number of other common sources of marital conflict have been contributed through clinical evidence: (1) *Matter-of-factness* occasionally comes as a shock, particularly to the wife, when after the honeymoon the couple returns home, the man goes back to work, may have some evening business or club engagements, and perhaps even likes to bowl or play golf with some other men. Life cannot consist entirely in romantic love-making, but the change may be too abrupt. The husband should plan a tapering-off period. (2) *Uprooting the wife* from home, residence, and friends (more pronounced if she married an out-of-town man) may be serious. The husband may help by inviting her relatives or friends for *short* visits, spending an occasional week end or holiday at her former

home, and otherwise bridging the gap. But eventually adjustment must be toward the new life, and the psychologically mature individual will make the grade. (3) *Diminution of sex activity*, from six months to a year after marriage, and again around middle age, may make the wife think her husband thinks less of her, but this is normal and to be expected. (4) *The working-wife* situation creates a set of problems. Perhaps this is the only way a couple can get married in these days of prolonged education and slower advancement. Perhaps the wife doesn't want to drop out of business life immediately, especially in cases where the husband's job takes him out of town or is otherwise time consuming, and where she has a tiny apartment that won't take over an hour or two a day to keep up. But her business career should not be a permanent goal. The average woman wants to have a family, and both want to have a better home life than a working wife can achieve. There will be two rubs when she does quit work, though. First, reduced income for a while, until the man earns substantial promotions. Second, the wife may find herself lonely and at loose ends daytimes, especially if she has worked for several years. If she does continue working, there is a danger that the man will get to feel incapable of supporting a wife, which makes for marital unhappiness. In effect he is only supporting himself, so he may lose incentive to forge ahead. Such a marriage, too, tends to be undertaken on a shoestring, and may mean little more than two living under the same roof, hardly more than two friends who have "bachelor quarters."

V. Summary

Because we have attempted to cover in scarcely a dozen pages the highlights of a field which could easily fill several volumes, let us summarize our salient points.

1. Marriage is a serious matter. One must determine that he is ready for it, that his proposed mate is suitable for himself, and that he is determined to keep the marriage going harmoniously.

2. Selection of one's mate is a matter of suitability, not absolute valuation.

3. Discard the "one and only" idea, and try to match a proposed mate to yourself in terms of age, education, religion, general family and personal background, and outlooks on life in general.

4. Before marrying, one should feel himself psychologically mature, educationally and vocationally adjusted, unemotionally oriented toward sex, and having recognized his own faults and made some attempt to control them.

5. People are not reformed by marriage; this usually adds to rather than subtracts from the problems.

6. Acquaintance of less than a year and engagement of less than six months are likely to be risky to ultimate happiness.

7. Mixed marriages—race, religion, social milieu—are dangerous, and must be approached with great care.

8. Beware of in-law complications.

9. The sex factor in marriage is of far less importance than personality adjustment toward the marital situation and to the mate.

10. Finances are important not so much in gross cash income, but in agreement on spending policies and actual practices.

11. Wife's continuing to work, and children in the home, may or may not increase or decrease happiness. The principal thing about either is agreement between the couple, better discussed prior to marriage than allowed to arise as a bone of contention later.

12. Other pitfalls are jealousy, nagging, immaturity of one of the pair, flirting and infidelity, neuroticism, selfishness and stubbornness.

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CHAPTER XXXII

SPEAKING IN PUBLIC

1. Purpose of This Chapter

Most of us from time to time have occasion to speak before a group, in our work, in a social club, before a civic organization, or at a dinner. We may be presenting a formal officer's report, describing a committee project, trying to sell the board of directors on some proposition or just helping entertain. Naturally in any of these situations we want to be able to speak so that our presentation will be most effective and carry the greatest possible amount of conviction. There are a number of psychological principles which will assist us to achieve our ends.

Right at the outset we wish to emphasize that we are interested only in suggesting means of making a plain talk effective. We are not thinking of situations quite so dramatic as a William Jennings Bryan swaying a national political convention, or of a Clarence Darrow dominating a courtroom, or of a Billy Sunday driving his audience at a revival meeting into a religious frenzy. Rather we are thinking of the typical reader of this book in a fairly commonplace situation trying to put across something that may be important to him, even if perhaps of lesser moment to the world at large.

We are thinking likewise of the place a college graduate should take in his community. He or she is expected to become more or less a leader in civic, business, and social affairs, and as such is asked now and then to put some spoken English together in smooth and coherent fashion. The writer has been shocked and definitely ashamed on several occasions to hear a halting, disconnected, and

scarcely comprehensible talk by a college graduate. And I am not speaking of polished oratory; I am referring rather to such informal occasions as a high-school athletic banquet or a report by the chairman of the local Red Cross annual drive, where one is asked to speak informally, has an entirely sympathetic audience, and has had several days to prepare his brief remarks.

We just stated that we are not talking about formal oratory. Not only is this demanded of few, but even in the political field leather-lunged spellbinding is rapidly being replaced with plain talk. Perhaps radio and public-address systems have contributed to this. No longer need a person bellow and work himself up into a frenzy for his voice to carry and to convince his listeners that he is sincere. The best politicians, preachers, and lecturers nowadays talk as if they were conversing with a friend—straightforwardly and calmly, but of course with considerable advance preparation.

II. Cultivation of Poise

The development of speaking ability is largely the acquisition of poise. Poise is largely acquired, and few people are "born speakers." If one worries about his shyness or nervousness, let him ask any friend of his who may do a good deal of public speaking—a minister, a teacher, a lawyer, or a public official—if he felt at home on his feet the first few times he delivered any sort of talk. We would be willing to wager that not one in a hundred felt at ease the first time, or even the tenth time. Most speakers, regardless of years of experience, are somewhat nervous before a strange audience—a new congregation, the first class meeting when a new school term is beginning, voters in a strange city, etc. It is said that a touch of nervousness helps one do a better job, just as an athlete excels in the stress of tough competition.

Poise is principally a matter of experience. How may this be gained? Without a doubt a course in public speaking can be very valuable for the majority of us. Many don't relish the prospect of taking such a course, for the very reason that we recommend it—because they are afraid that they will be embarrassed when it is their turn to get up and present a 5-minute talk. Isn't it far better to be a little perturbed a time or two in front of fellow students

than to stammer around the rest of your life in giving a report to one's club or one's business associates?

Active participation in certain extracurricular activities may provide a less formal, but equally effective opportunity to acquire this poise. If one happens to be an officer of any campus organization, or speaks up occasionally in dormitory or fraternity meeting, he is acquiring this experience and the poise that goes with it.

In a survey of over 400 students taking speech courses (3), through a "personal report on confidence," the less confident speakers had had less formal training and experience in speech, cared less for activities and future vocations which involved speaking, and in general indicated a lack of confidence in themselves and toward their social relationships. It seems very unfortunate that any individual would revise his vocational preference rather than spend a few dozen hours developing poise and self-confidence through actual practice in public speaking.

Another major item of assistance in the development of poise is to have a thorough grasp of one's material. If you know your subject forward and backward, it helps to give you the confidence to make an effective presentation.

51 Planning the Talk

The crux of any talk is in its preparation, regardless of the fluency or experience of the speaker.

A. Organize and Outline Your Talk

If I may be personal, there are certain topics in psychology on which I have lectured more than 25 times, but I still wouldn't think of going into a college class or before an adult group without a newly prepared typewritten outline of just what I intend to cover. Any careful speaker wants to make sure that he covers all the points he plans, and in the desired order. Otherwise he will omit some ideas, or go back and forth in disorganized fashion. As one writer says, "Don't be a hash thinker—stick to the point."

If one doesn't wish to appear conspicuous about using notes, he can have a brief outline typed on one or two 3 x 5 cards. I have never noticed an audience yet which seemed bothered by my using

an outline, and I never try to conceal the fact that I am using one. Perhaps they may even feel that I have gone to some trouble in preparing an orderly presentation. This little outline helps the speaker to retain his self-confidence, as he can always refer to it if he gets stuck.

The question of writing out the entire talk and reading it is occasionally brought up. This should be done only if the wording is very precise, say on a controversial issue where one might be misquoted in a newspaper report. Most speakers prefer extemporizing from a prepared outline. This will keep them on the right track, but provides desirable spontaneity. If the talk has to be typed out in full, to give copies to the press or radio station, it still might be better presented if one does not read it word for word. Never memorize and then recite. It will sound "canned," and if one forgets he may find himself in a bad predicament.

Your outline will probably go through several drafts—this is to be expected. List first your major headings, then add subtopics under each. Type the whole outline, double or triple spacing, and revise from this. Think of it several days in advance, carry your notes with you and jot down on the spot any new ideas that may come to you. It will gradually evolve into a better whole.

B. What Is Your Purpose?

Speeches fall into four principal types: informative, persuasive, entertaining, and graceful (gifts or acknowledgments). Have you a message to convey, or is your primary purpose to entertain? Don't try to amuse, even part of the time, on a highly serious occasion. And don't try to educate at a testimonial banquet. Your choice of material and your mood while speaking must be adapted to the occasion.

C. Find Out About Your Audience

If your audience is not well known to you, by all means ascertain essential information before you accept the invitation. The most pertinent points are size, age, sex, occupation, interests, residence, and whether it is a special-interest group such as manufacturers, lodge members, or housewives, or a heterogeneous audience.

If a speaker has neglected to make such an inquiry he may be floored to find an entirely different type of audience than he had expected. Once a lecturer was asked to speak to a group and prepared a talk on vocational guidance, thinking that would be of broad general interest. Upon arrival he discovered it was a church social, with the audience from first-grade children to 90-year-old men, and virtually everyone a farm resident. Adapting at that late hour is virtually impossible to anyone but an experienced orator who has several stock speeches in his repertoire each available at a moment's notice. And it is not to this type of speaker that we are addressing these brief suggestions.

D. Collection of Facts

Collections of facts may or may not be necessary. An hour or two in a library or with an encyclopaedia may provide one with a great deal of useful information on his subject. One need not assemble a mass of data. Two or three major ideas will be about all that is necessary, or advisable, in a short talk of say 15 minutes. Those not used, but usable, may be valuable in reserve for questions.

Statistics must be handled carefully. Even a trained and interested audience can be engulfed by a mass of figures, especially presented orally. A few comparative figures will not be too much, but present them right together, without expecting the audience to hold them in mind very long. If one's report necessitates quite a number of figures, one should prepare a mimeographed handout, or use slides, charts, or blackboard. The less expert the audience, the less one can expect them to understand and assimilate statistics.

E. How Much Should Be Covered?

Usually the inexperienced speaker tries to get too many ideas across, and even experienced lecturers often make the same mistake. One might lay down the criterion of attempting to put across no more than two or three major ideas in a 15-minute talk, with perhaps one more idea for each additional 15 minutes. The speaker naturally hates to omit anything, yet in his zeal he may so engulf the audience that he leaves nothing in lasting memory.

F. Censor Your Outline

Apply the blunt query about each point—"So what?" Does this really add anything? Does it contribute to the development of your purposes, or is it merely an interesting side issue? Will it interest the majority of the audience, or is it a private ax of your own you would like to grind?

G. Plan Your Time

Planning time is an important and often neglected factor. Too often the speaker depends on luck to bring himself out in the allotted time. The tendency is to run far over one's limit, which causes audience boredom unless the chairman summarily closes him off. If the talk is rather important, one should rehearse it at home and time it. Don't fail to allow for any introductory pleasantries, explanation of charts, etc., all of which consumes far more than the "few seconds" one may think.

The writer has used a schedule in planning half-hour radio talks. At 3:06 the first topic should be completed, at 3:13 the second section is to be wound up, and so on. If I ran over on the first, I shortened the second; and thus kept roughly to my allotted limits all the way through.

H. Use of Anecdotes or Humor

Use of anecdotes or humor depends on the situation. At a sports banquet the group expects little more than a string of amusing anecdotes, but in presenting a project to the board of directors one must be deadly serious. A touch of humor, if appropriate to the subject matter, the place, and the audience, livens things up and keeps the audience interested. But if dragged in by the heels like the trite beginning "I am reminded of Pat and Mike . . . ," one feels that the speaker is only trying to be a good fellow and can't think of a strong introduction. Well-chosen anecdotes are vivid, attention-sustaining, and can have excellent memory value. But apply the "so-what" criterion to stories you think of using. Anecdotes are on three levels: occurrences, occurrences that one witnessed, and events in which one was the hero. An audience quickly tires of the third.

V. Presenting the Talk

As stated before, the presentation of a talk is the culmination of the preparation which preceded it, so like a stage play it can be no better than the results of thought, study, and rehearsal. There are a few special suggestions, however, which we can make regarding effective presentation.

A. Opening the Talk

Start strongly. Don't be trite, above all. Word your opening sentences exactly. The first minute or two will be of crucial importance to you as well as to the audience, so plan these remarks carefully.

If you are introduced by a chairman you will graciously acknowledge the introduction, perhaps making a slightly self-deprecating remark to show the group you are not taking yourself ultra-seriously. A story may be appropriate. Some public speakers advocate getting a laugh almost to the point of necessity. A laugh or other light remark will go a long way toward breaking the ice and solidifying the audience. After one laugh they are more like friends than a mob of isolated individuals come together by chance. If one uses a little sly humor based on some local topic of interest (such as the jokes one now hears at Brooklyn's expense on almost any humorous radio program), a trick used years ago by vaudeville comedians, he will not only arouse the audience but will give them the idea that he has informed himself about local conditions or gossip.

The use of humor should never be personal or inappropriate. The audience should laugh *with,* not *at.* There may be some occasions when it is best omitted, too, such as a safety meeting. There you can attract attention by such a dramatic remark as "Within the next year 20 persons in this group will have a relative or close friend killed in a traffic accident," basing that figure on the size of audience and accident probabilities.

B. "Tricks of the Trade"

Tricks of the trade are practiced in speaking as in any other field. One has several major points he especially wishes to get across. Favorite oratorical tricks are: shouting, speaking very softly to make

the audience especially alert to catch the subdued tones, pausing before a significant remark, speaking very slowly, gesturing or banging the fist on the desk, and verbal emphasis such as "Now get this," "I wish to emphasize," "In conclusion." Laws and principles of learning may be used practically, in the form of several repetitions scattered throughout the talk, repeating immediately after a point is initially stated, placing an important point at beginning, placing it at end, and trying various types of vividness.

These various principles have been tested. Two studies, conducted with substantially similar techniques, showed decidedly different results. In Jersild's (4), done earlier, the use of five, four, and three repetitions led the list, whereas Ehrensberger's (2), which claimed to have improved the Jersild's technique in several ways, found two types of emphasis, "Now get this" and an immediate repetition directly after a statement, gave the best memory values. The two did agree, however, that a loud voice and banging the fist on the table were poor. The findings of the two investigations are summarized in Table 80. It is difficult to account for the differences between the two studies. The second did have the advan-

TABLE 80. Modes of Emphasis in Public Speaking, Summarized in Terms of Rank Order of Memory Value for Two Different Experiments.

Mode of Emphasis	*First Experiment*	*Second Experiment*
"Now get this"	3	1
Immediate repetition, late in speech	9	2
Three distributed repetitions	2	3
Slow	11	4
Immediate repetition, early in speech	6	5
Pause	5	6
Gesture	8	7
Four distributed repetitions	1	8
Two distributed repetitions	4	9
Soft voice	[a]	10
Loud voice	7	11
Banging fist on table	10	[a]

[a] Not used in this study.

tage of profiting from any shortcomings of the earlier, such as use of somewhat more connected narrative material, and several speakers rather than one in order to balance out individual emphases. Yet it seems peculiar in the later test to find three repetitions decidedly better than either two or four. Two positive suggestions do stand out, however. Memory value can be aided by calling attention in advance to an important remark, "Now get this," or variations therefrom, such as "Let me stress this next point." Stating a thing several times is bound to help. Pauses and gestures are intermediate in value. Finally, oratorical bombast is poor, at least under the experimental conditions used, which perhaps more closely resembled a classroom situation than a public platform.

C. Keeping Interest Alive

One must watch his audience closely to see if interest is lagging, if people are looking at their watches, or if some outside disturbance is distracting them. In this respect a face-to-face audience is better than speaking over the radio, where one cannot tell how many sets may have been turned off. It is wise for a speaker to plan his talk flexibly, so he can switch at a moment's notice to one of his more interesting topics, or even to bring in an interesting story or anecdote. If a story is broad enough to be brought in at several places, it may be saved for emergency. But don't drag it in by the heels, or it will fall flat, and the speaker will find himself in the plight of a prominent politician who had not even taken the trouble to read a ghost-written speech before going on the air and was unable to stop himself before he had read, "At this point tell joke to relieve monotony."

Also one should be prepared to cut out certain sections of his prepared talk, if he finds he is running over the time limit or if his turn to speak has come later than expected and the group is already tired from preceding speeches. Nothing is worse than a speaker who cannot rise to an emergency, but must go grimly through the whole of his prepared speech.

D. Asking for Questions or Discussion

Asking for questions or discussion is desirable in most informal talks. The chairman may announce the opportunity before or after

you speak, or you may make that announcement yourself. You might also indicate at the beginning whether you will welcome interruptions or would prefer to finish your formal presentation first.

If the talk is informative or educational, a technique to make the audience participate actively is to ask questions from time to time, not necessarily for direct answer, but in this fashion: "I am going to list several personality traits, characteristic of either an introvert or an extrovert. Tell me which type of personality you think each applies to. Ready? Which type is more willing to lend money? Which type is more reticent about calling a new acquaintance by his first name?" They can answer in chorus, volunteer answers, or just think the correct answers to themselves. In any case they are kept mentally active and alert, and the device helps weld the group together.

E. Concluding the Talk

Concluding the talk is second in importance only to starting it. A brief talk of 5 or 10 minutes will usually need no summary. One can merely finish with a strong point and sit down. After a somewhat longer talk one may wish to bring together in single sentences several of the major points he hopes will be remembered. Usually the audience will not mind, in fact will be aided by one's numbering these points. "I wish to summarize by repeating the three main facts I have tried to put across. First. . . ." Another approach is to advocate some course of action, so one can wind up, "Therefore, ladies and gentlemen, it is evident that our only logical course of action is to build a new high school—vote for Smith—contribute to this worthy charity."

Never commit the unpardonable sin of finishing weakly. It is far better just to sit down after you have made your last point than to trail off. The advice to the slow-moving motorist, "Drive or get off the road," is applicable to a speaker. When you have stated your case, summarize or draw your conclusions strongly, then quit.

Improving Your Style

Naturally one hopes and expects to become progressively better with practice and experience. With experience he will develop

self-confidence and poise. He notes what subject matter and what approaches please an audience and what seem to bore a group. He studies the techniques of other speakers whom he hears in person or on the radio.

It is revealing to any one of us to hear our own voice. On a college campus and in most cities it is possible to have a recording made of oneself reading a passage. With the help of a speech instructor or someone expert in radio diction, you can detect any faults in pitch of voice, monotony, harshness, enunciation, emphasis, rate of talking, breathing, and other important speech habits. You may find a few habits you never suspected, such as letting the voice down at the end of each sentence, rising and falling too consistently, speaking too many words without breathing and then inhaling with a noticeable gasp, or simply a lack of variation.

Granted that a college student has been using language about two decades by the time he makes such a recording, it is still entirely possible to change and improve one's diction. It may not be accomplished in a day or two, however. One will have to keep his program in the foreground of his attention constantly for weeks or months, but if he expects to fulfill the purposes we outlined at the beginning of this chapter, it will be decidedly worth while.

Let us conclude by reiterating that all the suggestions in this chapter are pointed toward developing reasonable assurance and speaking facility on the part of an ordinary citizen who is taking his part in community affairs, and are not directed in any way toward the development of top-flight oratory.

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CHAPTER XXXIII

PSYCHOLOGY IN SPORTS

I. What Makes the Good Athlete?

The possibility of measuring potential athletic aptitude or attained skill has at least three practical values: (1) Any one of us could tell whether it might be worth his time to take up a sport, and what degree of success he might have in it, with hopes of making a regular team or merely for his own pleasure and physical fitness. (2) The coach could predict whether a candidate will make a good performer, or whether coaching time and effort would be largely wasted. This boils down to the question of whether certain people possess innate talent, or whether training alone will suffice to make a superior performer. (3) Performance tests could be used for measures of attainment, say in a physical-education program, where it is desired to measure accurately the level of performance, as one measures level of knowledge in a written examination in a classroom subject.

A. Physical Structure

While performance in athletics is due more to function—speed, coordination, rapidity of decision—it is obvious that certain structural characteristics are of distinct value. The football player is helped both offensively and defensively if he possesses height and weight; and, comparing positions, a pass-catching end needs more height, while a blocker or lineman is better if not so tall but more chunky. In basketball height is even more essential, and too much weight a handicap. In baseball, where agility is paramount, size is still a help. Most home-run hitters are large men, and most pitch-

ers who last over a period of years are 200-pounders, even though they throw a ball weighing only a fraction of a pound.

In tennis height is a real asset, but with the constant running and no physical contact a slender build is an asset. Most top-ranking players are well over six feet, and perhaps around 160 pounds. Most swimmers have large hands and feet, although this is more important in the sprints than in distance races. The ideal wrestler has broad shoulders and strong arms, but narrow hips and slender legs; thus he has greater strength than his total weight would suggest.

The opposite holds true in events calling for an unusual degree of agility but where body contact does not enter—namely, diving, gymnastics, and ski jumping. In these the leading men year after year are of average or even short stature, but they are well muscled and well proportioned. Too long a frame is difficult to control in maneuvers where one is marked on form alone, or form and distance equally weighted as in ski jumping.

We must admit that these generalizations apply in the long run, and realize that there are many exceptions. Persons of average height have ranked among the first ten in national tennis. The National League home-run record is held by an individual 5′ 9″ and of less than 170 pounds. A 150-pound pitcher was preeminent for 15 years. A 154-pound guard made All-American. Yet these are exceptions, and are in the distinct minority.

B. Motor Coordination

The coordination and grace of a top athlete are beautiful to watch. One of the greatest differences between major-league and amateur baseball is the sureness and ease with which difficult fielding plays are made. An expert golfer with an easy swing hits the ball 50 yards farther than the rest of us can achieve with a mighty swat. The top-flight tennis player seems to be serving smoothly and easily, yet the ball might well have been shot from a cannon! Speed skaters amaze one with the speed with which they cover the ice so easily with their long strokes.

This coordination does not seem to be entirely due to long years of practice, either. Most of us can play golf or tennis for years without achieving more than fair skill, yet we see boys of 20 who

are among the top few in the country. Then, too, there are some all-round athletes who seem able to pick up a new sport very readily and show good form from the outset.

All this suggests that first-rate athletes must possess some fundamental abilities which the rest of us do not have. The writer attempted to measure these aptitudes (5). A series of laboratory tests was administered to approximately a hundred athletes from six teams at the University of Wisconsin, and the results were compared with a control group of nonathletes. The latter were so designated as not having earned a varsity letter, although many had participated in high-school or intramural sports.

The apparatus employed was the Seashore Motor Skills Unit, the following five tests being used: pursuit rotor, spool-packing, serial discrimeter, crank drill, and speed of tapping. The battery is completely described by Seashore (10) but we shall give a brief outline of the nature of each task for more immediate understanding. We made a few minor departures from the procedures which Seashore recommends, but these changes concerned the length and number of trials, rather than the use of the apparatus.

1. PURSUIT ROTOR. This consists in following with a loose-hinged pointer a small target rotating near the periphery of a phonograph turntable. An automatic electric counter records contacts, perfect performance scoring ten contacts each revolution. Twenty revolutions constitute a trial.

2. SPOOL-PACKING. Two spools are taken up at a time, one with each hand, and placed end to end in a tray; another pair is put just above these, and so on until the tray is filled with six pairs. The experimenter then slides the tray along, which dumps it, and automatically by this operation brings another tray into position, so that the subject may pack the next pair of spools without the slightest break in movement. Five trayfuls make up one trial, time being the score considered.

3. SERIAL DISCRIMETER. A number, 1 to 4, appears at a window; the subject presses the appropriate finger, which brings another number into view; pressing the correct key in turn moves this on and presents the next digit, and so on until a revolution is completed, which involves one hundred choice reactions.

4. CRANK DRILL. The number of revolutions done on a crank drill in ten seconds was recorded by a Veeder counter.

5. SPEED OF TAPPING. The number of taps on a telegraph key done in five seconds.

Athletes were superior over nonathletes in four out of the five tests. Only in the serial discrimeter test, somewhat analogous to playing a piano or typewriting, was there no difference. The athletes particularly stood out on the pursuit-rotor test, not only in having a higher initial score, but in improving more rapidly over the five trials allowed. In turn, among the athletes the baseball and basketball men were the most superior, and this is reasonable considering their skill lies in following a moving ball. Yet whether the experience helped them on the test, or whether the same innate ability permits excellence in both tasks, is a question. Gymnasts stood out among the athletes, with fine all-round performance on the motor tests. The poorest scores among athletes were by track runners and football linemen, whose skill is more in their feet and muscular strength, respectively.

Particular effort was made to obtain some subjects who had won letters in two or more sports. These all-round athletes made especially good scores, being particularly outstanding on the pursuit rotor.

We suggested above that it is difficult to isolate cause-and-effect relationships in determining whether athletic experience produces improved motor coordination, or whether it existed already and enables the individual to do well in certain sports. In one article on airplane-pilot training it was suggested that certain psychological functions—power of attention, rapidity of perception, psychomotor reactivity, ability to calculate distances, depth perception, and integrated physical and mental coordination, as well as emotional control—might be developed by such sports as tennis, squash, golf, table tennis, basketball, croquet, and swimming. Others, such as football, hockey, and polo, are discouraged, more for fear of accident than because they are inappropriate.

Such recommendations bring up the important and practical problem of transfer between one sport and another. Some baseball managers forbid their players to practice golf during the season fearing that the swing is enough different so that batting will

be adversely affected. Other managers feel that the two are so much different that no interference will occur. No actual test has been made, although it might be possible in say a spring-training camp, by dividing the squad into two equal groups and having one group play golf mornings.

How to train for a sport out of season is another practical problem which was once dropped in the writer's lap. In a northern university the ski team wanted to be in the best possible shape before snow came, since meets were scheduled not long after the first possible snowfall. Using principles of transfer of training according to the theory of identical elements (consult any elementary or educational psychology text), we analyzed what muscles and movements were particularly demanded in skiing, and compared them with many common forms of exercise. We concluded that bicycle riding presented the greatest similarity, so had the squad train by riding dozens of miles a week during the fall.

C. Personality

Personality of athletes has been reported in several investigations. In two such (2, 11) it was concluded that athletes tended to have more desirable traits and to be better adjusted to their environment than other students. We wonder whether this might not be equally true with those engaging in other extracurricular activities, participation in which would appeal to the more socialized, rather than proving that engaging in them produced socialization. In a high school the more submissive boys tended to prefer individual sports like tennis and swimming, while the more aggressive preferred team sports. This would likely be true with introversion and extroversion, respectively.

D. Intelligence and Scholarship

Intelligence and scholarship have likewise come in for their share of debate. One school of thought holds that "athletes are dumb" while the other contends that intelligence should help one excel at anything, athletics included. Terman (12) found in his very thorough study of gifted children (IQ 140+) that these boys and girls were as fond of sports as children of more average talents, but

that they spent less of their leisure time engaging in them, preferring moderation and using the time they saved for reading and other intellectual hobbies.

If one struck an average of quite a number of surveys on athletes in college, he would conclude that the bare facts are that athletes are slightly below the average of the student body in both intelligence and grades (9). But we must remember that there are several factors of a selective nature. A certain number of athletes would not enter higher education if their sport, usually football, did not exist. This tendency does not exist for the less publicized sports such as tennis, track, and swimming, in which activities performers are often above average of all students in both aptitude and achievement. Next, athletes ordinarily have to earn passing grades for a year and have to become bona-fide sophomores before they are eligible for intercollegiate competition, which weeds out the lowest. Further, the time spent in football, between practice and skull sessions, may total 25 hours a week, plus out-of-town trips, plus the fatigue hampering study—all must be taken into consideration. We ought to compare athletics with other outside activities of time-consuming and fatiguing nature, such as being lead in a play or editor of the school paper, or working at an all-night job.

Intramural participation at one southern school was found to have no unfavorable effects—in fact the average of those engaging surpassed the all-university grade-point average. So neither interest nor indulgence in athletics up to a certain extent is necessarily harmful to one's college career. But major sports may be another story, and a student should think carefully of the relative values at present and into the future.

E. Prediction and Measurement

Prediction and measurement of athletic aptitude and/or achievement has been attempted in a number of instances, in some cases as carefully as prediction of scholastic success (which we discussed in Chapter VIII, College Personnel). Most of these have been aimed to improve instructional methods or to serve as end-of-the-course measures of achievement rather than of skill on a major competi-

tive level.[1] An interesting observation is that while men are probably more interested in sports and attain higher levels of proficiency, almost all the studies of the character just named and about to be discussed have been conducted in women's physical-education departments. Possibly absence of varsity teams has led to greater interest in the average performer's acquiring skill for personal satisfaction to herself rather than necessarily of competitive caliber.

A standardized backboard test in tennis ranked players so well that this order correlated +.92 with another ranking derived from a round-robin tournament (each playing each other once). The test was as follows: The subject stayed 5 feet from a backboard, and hit the ball against the wall as many times as possible in 30 seconds. The ball could, as in real tennis, be volleyed or hit on the bounce. Extra balls were provided, so if one were hit out of reach another could be obtained without undue consumption of time. Balls hit below a line painted at net height were not counted. Three trials constituted a test (3).

Basketball ability has been measured likewise by means of a series of tests, as follows: bounce and shoot, pivot and shoot, jump and reach (equated for player's height), wall speed (bouncing ball against wall as many times as possible in a certain time limit), and zone toss (accuracy of throwing). Intercorrelations among these several tests were rather low, but this is not necessarily undesirable, as each subtest should contribute in a different way toward total playing ability.

Factor analysis of motor skills contributing to athletic ability was attempted (6) by administering 18 tests and measurements to over 400 high-school boys. Strengths of various limb and trunk functions, dash, broad and high jumps, shot-put, and pull-ups comprised the principal tests. Muscle velocity was predicted from the dash and two jumps and the strength index, with a multiple correlation of +.82. Athletic power gave a multiple of +.89, being computed from the dash, two jumps, and 12-pound shot-put. The

[1] One who is seriously interested in reading many first-hand studies might consult the regular publication *Research Quarterly of the American Association for Health, Physical Education, and Recreation.*

author suggests use of these both for coaching aids and for assisting the individual boy.

Prediction of future skill has been attempted in several cases. The author of one states (*8*):

"In a similar way the predicted score in any physical education activity *can be worked out. To illustrate . . . a boy who completes a running* test in 35.0 seconds can be expected to run two years later in the time of 35.0 seconds multiplied by .56 plus the constant value of 14.7, or in the time of 33.3 seconds. The possibilities are even that this boy will run between plus and minus one probable error or between 32.7 and 33.9 *seconds. The possibilities are 99 in 100 that this boy will do no better than* 31.6 nor worse than 35.0 after the two years' practice and training. A boy who has definite ambitions can shape them wisely with the aid of the prediction technique, and the instructor can know what improvement he can reasonably expect and can evaluate progress logically according to *individual variations.*"

Other typical studies have been made on tests of potential ability in gymnastics and tumbling, and swimming; accidents in wrestling, football, and skiing; measures of acquired abilities in several sports; and verbal knowledge of several.

A sample of the latter is one test of 100 true-false items on softball, measuring knowledge of rules and practices of the game, three typical items being, "A base runner may take one base on a passed ball," "It is better to encourage a player who has made a poor play than to fuss at him," "The batter should move to the back of the box *in batting against speedy pitching.*" Another test similarly measured badminton knowledge.

In evaluating such written tests, we all recognize that knowledge is far from perfectly correlated with performance. We have seen outstanding coaches who were never leading contestants in their younger days and also outstanding players who actually were far from deep students of the fundamentals of their sport. But in a college course whose purpose it is to teach the fundamentals of a game as well as its mechanical skill, the use of such a test is justified, perhaps however as only a portion of the ultimate grade.

Noting certain group trends in superiority in certain sports, speculation has arisen about racial and geographical factors. When American Negroes won the 100, 200, 400, and 800 meter races, as

well as the broad jump and high jump, in 1936 Olympics (much to the discomfiture of Hitler and his Nordic-supremacy theories) many explanations were advanced. The most likely seems to be that this race has what has been termed "explosive energy," which enables its members to sprint and jump better than whites. Others have said that Negroes having less money have not softened themselves riding in automobiles; yet this is obviously inadequate, as the superiority is in the short sudden contests, and not in distance races.

Climate accounts for some differences in skill, chiefly in terms of opportunity to practice. Nowadays almost all top-flight tennis players come from California, Florida, or Texas, where outdoor play is possible the year around. Big-league ballplayers come predominantly from the South and Southwest, and the north and north-central portions contribute far less than their expected share, based on population totals. In swimming, done mostly in artificial pools, no such differences show up. In fact, an indoor sport may suffer in an outdoor climate, say basketball in Florida or California, because it does not appeal to so many.

II. Reaction Time

It is clear that speed in starting is important in track, swimming, and other racing events. In contact games the man who starts first has his opponent at a disadvantage. In football the slow man will be knocked partially off balance, and in boxing he will find himself always on the defensive.

Quickness in deciding direction of movement, a more complex function than simple speed of starting, is also important. Examples of this are fielding a baseball, intercepting a forward pass or breaking up a running play in football, and decision on where to pass a basketball virtually before one has caught it himself.

The slight time necessary to make a reaction, particularly when choice is involved, is used practically in forward passing in football. One of the fundamental principles of receiving a pass is to run in one direction, suddenly wheel, and sprint at top speed in another, taking the pass right at one's outstretched fingertips. If it can be that well timed, interception is all but impossible.

Team coordination is essential in football, hockey, and crew. The football line especially must start as a unit to drive their op-

ponents back. Since there are bound to be individual differences in reaction time, a smooth start is not possible unless the men can anticipate the signals. In this connection an amusing story is told of a large, slow-moving tackle playing for a Pacific-coast college. He was so slow that the coach tore his hair until he hit upon the scheme of having the tackle start one signal ahead of the rest. This worked so well that a newspaper story once credited him with being exceptionally fast starting for such a large man!

It has been suggested that reaction time might be one of the bases upon which a would-be athlete selects his sport to concentrate upon. Those not quick enough to succeed in football, baseball, or basketball might be guided into swimming, wrestling, or track (other than sprints).

A study of reaction time of starting in football men was conducted by Miles (7) at Stanford. He tested all squad members during spring practice. He modified the usual laboratory setup, which calls for pressing a telegraph key while sitting in a chair, to a situation more closely resembling the task on the playing field. Seven men, in a line as in a game, placed their heads against hinged boards. When the signal was given they all lunged forward, the movements of the board loosing golf balls which fell on a moving piece of paper, making dents where they hit. An eighth ball dropped just as the signal was given. The paper was wrapped around a cylinder which revolved once a second. When all reactions had been made the paper was cut from the cylinder and the distances between the stimulus mark and those of the responses were measured. If the distance was half the circumference of the paper the reaction time was half a second, etc.

These scores were compared with independent rankings of the general all-round efficiency of each man as estimated by the coaches. The correspondence was remarkable. The original squad of 87 men had an average of 389σ (thousandths of a second). When the group had been cut to 55 men in the fall, the survivors had an average of 382σ, showing some selection. The 11 men who started the two major games averaged 353σ, which is just at the 75th percentile of the whole squad. One of the coaches observed, "It took me two years to decide on those selections, but you apparently got a line on some of the men in 20 minutes." Miles recognizes that he was

only measuring one phase of football skill, but the correspondence between speed of starting and total value to the team is so high that reaction time, and perhaps other related speed functions, seem to contribute very materially to success. Individual records agree very well with these mass figures. For example, the two best guards were among the fastest three of eleven candidates; the two best tackles measured were faster than any of their substitutes; and the two best ends were first and third in speed of starting.

One of the earliest findings in reaction-time measurement has especial application to starting a race. One may adopt either a sensory or motor set. In the motor set one focuses attention on the act of starting and what he will do as soon as he starts. The sensory set is one of listening for the gun. This latter is approximately a tenth of a second slower, since one has to perform more neural activity. He listens for the sound, then has to initiate the action, while the man who uses the motor set is only thinking of the act. We see what is probably a demonstration of these two sets in a track race when the pistol fails to fire. Some of the men start on the slight stimulus of the hammer clicking on the cap, while others hold their mark. They may congratulate themselves that they are steadier than the others, but as a matter of fact they are probably of the sensory type, and when the race does start they are likely to be a little slow off the mark. A tenth of a second does not seem very much—and it is not in terms of daily life, such as catching a streetcar—but in a fast 100-yard-dash it means one yard, which is greater than the winning margin in most high-class meets, and in an indoor race on a small track the faster starters will get to the corner first, which gives a tremendous advantage.

Another means of obtaining a fast start is to be relaxed when the gun fires. When one changes from one form of muscular action to another, the muscles have to relax temporarily while they make the shift. The time lost can be saved if one starts relaxed. To quote a specific example, the writer assisted the captain of the swimming team in the university a few years ago to get a quicker start. It could be seen, while he was waiting for the pistol to be fired, that the muscles in his arms, shoulders, and back were very tense, and that he had to relax, then make the necessary movements. As a result he was always off the mark a fraction of a second late. He

had a fine dive, so that he came up about on even terms with the others. Just coming up even was not satisfactory; he really should have been able to start swimming after the dive a few feet ahead of the others. By getting him away from the wasteful muscular tension, we were able to give him a start which furnished him an advantage of about three or four feet, meaning perhaps a fifth of a second, which is very important in a short sprint race.

Two other aspects of reaction time apply to officiating rather than to active competition. The peak of attention fluctuates somewhat, with the fastest start in a race occurring of course right at this peak. If the starting shot sounds after this peak, usually reached a second and a half to two seconds after the "get-set" signal, the start is inclined to be slow and ragged. An experienced starter is aware of this fact, and will not fire the gun more quickly or more slowly than this optimal time. Tied in with this peak of attention is the "refractory phase" of nervous activity, the gap between successive waves of attention. While this applies strictly to a single nerve fiber, a parallel with groups of fibers has been noted. This may account for an otherwise competent official overlooking an obvious rule violation. In one game an end who caught a pass for the winning touchdown was obviously (and later proved through movies of the game) two yards offside, yet the official stationed right on the line of scrimmage failed to detect it. One can readily see why an official will miss a violation which occurs when all 22 men are in motion, but one before the play has legally begun should not be missed, except under the circumstances we suggest. Since this is probably unavoidable, the principal remedy would be to grant other officials authority to call such violations.

III. Visual Factors in Athletics

In almost all sports vision is the primary and indispensable sense. Most sports requiring running in changing directions and following a moving ball call for judgment of speed and distance, as well as acuity and discrimination. One could not imagine a person with serious and incorrectible visual defects becoming very proficient in baseball, basketball, hockey, tennis, or any position but lineman in football. Wrestling, boxing, swimming, bowling, and golf might permit certain shortcomings. One test was conducted

on basketball players; all had visual fields larger than usual, and the person best in ability at concealing passes had the highest score of all the players.

A. Use of Peripheral Vision

In several sports one has to keep track of two things at once: the ball or its equivalent, and teammates and opponents. In basketball, for example, one dribbles up the floor, watches for a free teammate to pass to, and takes care that an opponent does not steal the ball. In this game he can best take care of the human element if he does not have to pay too strict attention to the ball. Good players can dribble automatically, watching the ball only "out of the corner of their eye" and the players directly. But if the motion of the ball is rapid or uncertain, as in football or tennis, it is essential to keep the eye on the ball and note one's adversaries in indirect vision. If he watches the opponent and takes his eye off the ball, he may fumble or mishit the ball, as the case may be.

B. Color Zones of the Retina

Colors are not equally well perceived by all parts of the retina. Only in the very center are red and green seen; over a larger area blue and yellow are visible; and the outer parts are sensitive to black, white, and grays. Practically, this means that one should not attempt to perform acts calling for discrimination beyond these sensory possibilities.

An instance is related of a basketball game being lost by a team because of ignorance of this principle (4). Its passing game depended upon a lot of deception, where men looked in one direction and passed in another, hoping thus to catch their opponents off guard. In this particular game the jerseys of the opponents were of so nearly the same intensity that in indirect vision many passes were thrown to them rather than to a teammate. In such a case the team should take care to wear jerseys of a widely different intensity from their opponents, a white to contrast with color, or a color with white. Striped jerseys are unusually perceptible in the outermost zones of the retina, and will of course not be mistaken for any solid color. Red and green, seen only a few degrees from

the center of focus, should be absolutely avoided if the team is using such deceptive tactics.

C. Color Blindness

Color blindness of any player is naturally incorrectible, but it should be discovered, and the type of play or color of jersey should be regulated accordingly. A striped jersey, or one of very different brightness, would be imperative if deception is to be practiced.

IV. Instructional Methods

As in classroom teaching and industrial training, a few studies in physical education have been aimed at methods of coaching, to help players learn faster, learn the correct habits, and attain a higher ultimate level of skill. It might be observed that the field of athletics is far behind the first two named; the surface has barely been scratched. Undoubtedly there has been too much reliance on coaching by past stars in ways which may have worked for them, and too much reluctance to depart from these ways. A big-league baseball team once employed a psychologist as adviser, and the writer was told in personal conversation that superstition and the "tried and true" way stood in the path of trying anything new. "No one ever did that," with gales of laughter, was the usual reception to a suggestion to try something different—for example, taking a sprinter's start to score from third after an outfield fly.

One study tried a problem very similar to that we discussed earlier in connection with time and motion study—that of speed of swing in learning to bat. One group was told to swing slowly, striving for accuracy, and to speed up the swing after accuracy was attained. The second group was instructed to consider speed of swing as part of normal batting, and this second group ultimately developed more accuracy, no doubt hitting more extra-base blows as well.

Standardized instruction in archery was given a group of 20 women students, with 20 more not being taught serving as controls. A three-months training program totaled 18 sessions. The learning curve for the instructed group was definitely and consistently ahead of the untutored learners. An interesting fact was

that some with considerable previous sports experience in the untaught group improved considerably; possibly these might be considered self-taught.

What is comparable with time and motion study in industrial work has been applied to several phases of sports. High-speed movies have been used to improve shot-putters' techniques, to show errors and shortcomings. By measuring oxygen consumption, the efficiency of various swimming strokes was computed, and they lined up in this order: crawl, back, breast, and side—the latter most consumptive of energy. One- and two-hand shooting in basketball have been compared, with the one-hand shot showing 3 per cent greater accuracy. This study was not experimental, but rather from compilation of actual accuracy in state high-school tournaments.

V. Strategy in Different Sports

A. Tennis

Tennis affords an excellent chance for the use of psychology, since one man is pitted directly against another, with no one else to help or hinder him, and with no other variable, such as par in golf or distance in the broad jump, to worry about. The score depends wholly upon the relative performance of the two competitors.

Before discussing strategy too seriously, it is obvious that one must have good control before he can plan much of an offensive in any game. If one plans to play to an opponent's weak backhand, he must be able to place the ball hard on that side of the court. If you want to play to his overhead and expect to lob a good deal, you must be able to do this accurately, or the strategy will be to no avail.

The first thing in planning is to take advantage of your opponent's weaknesses, if any. This is not at all unsporting, as a game is made up of all sorts of shots, and it is only smart to play to a weakness rather than a strength. To do otherwise is to lessen one's own chances of winning.

Along with this, one's game must have some variation. One cannot play every single shot to a weak backhand or overhead. One may hit several to such points, then suddenly shift strategy, and the adversary may play the different shot poorly or weakly.

As to general plan of play, one must continue a style of game that is winning and change one that is losing. If it is winning you can do no better; if you change it may give the opponent just what he wants, as well as depreciating your own game. But if you are already losing it stands to reason that it will continue to lose, unless you are convinced that you are just a little off form and should hit your stride at any moment. There is nothing to be gained by continuing a losing game, and everything to be gained by trying a change of tactics.

One also plays to the score (as in a card game). One cannot hope to win every point, and cannot play at top speed during the whole of a match. He will make exceptional efforts, however, to win certain crucial points and games. For example, games are usually won by the server, and it takes unusual effort to break through service. The logical time to apply extra effort is with the score 3-all or 4-all; a game down at this stage of the set is tough to make up. If one can hold his own service, he needs to break through only once to win the set.

B. Football

Strategy in this game is largely centered about correct choosing of one's own plays and anticipating or diagnosing quickly the opponent's. In choosing offensive plays there are several things to consider: what plays have been working well, what the defense might expect, what will set up later plays likely to work, and such technical features as position on field, down, score, and stage of game.

As in tennis, one keeps up a winning attack—running or passing, directed against relative weaknesses of a lineman or defensive back. But surprise may make a huge gain, and as the saying goes "break up a ball game." One team considered to have only a fairly strong running attack made three first downs in succession, then suddenly passed on first down and scored a 40-yard touchdown. This of course is risky, as if it falls incomplete the team is left in a hole.

Defensive strategy demands knowledge of opponents' habits, both in terms of strategy and individual habits. Many players give away (if one is alert enough to detect them) by minor movements the direction the play will take or whether they are to take the

ball or run interference. Here are some actual bits of behavior which have been observed: (1) A quarterback turned his head slightly right or left, depending on whether the right or left halfback was to receive the ball. (2) A center gripped the ball a little more tightly just before he passed. (3) A fullback curled his fingers loosely if he was to carry, and kept a tight fist if he was to run interference. (4) A quarterback licked his fingers if he was going to pass. (5) A pitcher threw a fast ball with one motion and a curve with another. (6) A baseball player pulled his cap on tightly before stealing second. Such tip-offs as these in any sport will enable the defense to concentrate accordingly. Boxers, tennis players, and other athletes have to take pains to rid themselves of any such telltale mannerisms.

C. Hockey

We have already suggested the use of indirect vision in carrying the puck. Apart from this our major concern with this sport is the psychology of dodging a man and preventing him from dodging around you. To dodge, one must either be far faster or must outsmart the other man, and the latter is usually necessary. The best way to do this is to feint in one direction and suddenly wheel in the other, making him move to follow you and then taking advantage of his momentum. A football player in an open field will similarly try to make the tackler commit himself. After following this maneuver a time or two the opponent thinks he has caught on, and then one can go the way he looks and perhaps fool him again.

Alert defense men say that the way they tell which way a man is going to dodge, in hockey, football, or basketball, is to watch his legs. Regardless of his eyes and arms, his legs are what furnish the locomotion, and they must be the first to respond to the decision. If one can stop the opponent before he has time to dodge, the play is obviously stopped.

VI. Morale and Suggestion

A. Confidence

Confidence is closely allied to autosuggestion. If one has confidence that he can and will win, he has much better than an average chance, assuming he and his opponent are of roughly

equal ability. Doubt and fear are not inconsequential. They divide the attention and set up mental conflicts, which in turn reflect themselves in muscular tension. Tension prevents smooth coordinated activity, which is highly necessary in a tennis or golf stroke or in batting form. The man who wins is the one who can relax and keep his form in a pinch. The best mental attitude is to feel that one can win, but that it will be a tough struggle and only his best can win.

In track, tennis, and match-play golf, confidence is an element which often makes the difference between winning and losing when contestants are evenly matched. At one time three rival universities had mile runners of practically equal ability. Yet in the dual meets one always came in second, letting either of the other two beat him. All of the races were of the same type—the men were on even terms for three and a half laps, and in the sprint just before the tape this one man would fade out just enough to be beaten by a few feet. The difference was so slight in each case that minor variations in physical condition from day to day should have made far more difference. This runner seemed to have the feeling that the others could beat him, and they did.

In another case a topnotch and highly publicized prep-school sprinter was entered in the quarter mile in the final meet against the school's closest rival. Since he had to run the 220 soon after the 440, the coach instructed him to run the latter just fast enough to win. He did so in 54 seconds, time which three other men had beaten many times, but each started the race feeling he could get no better than second, so was beaten in slow time.

B. Discouraging the Opponent

To win, one can aid his cause not only by having confidence in himself, but by making the opponent feel he has met his master. Tilden, often rated as the best tennis player of all time, speaks of the great advantage secured by returning an apparently ungettable shot. A person puts over a ball which seems far out of reach, only to find it coming back faster than he sent it over. Recovering this ball may have been accomplished only at the expense of great effort, but that one point may be worth ten ordinary ones in its psychological effect. Of similar effect on morale are knocking the

opposing team's star pitcher out of the box, striking out their slugger, taking a boxer's best punch without flinching, throwing an All-American fullback for a loss the first time he carries the ball, or chipping out of a sand trap right up to the pin in a close golf match.

We quote an incident concerning Walter Hagen, not only a golfer of exceptional ability, but a master of confidence and strategy. In fact, he had a reputation of not very often getting the lowest score in medal play, but almost never losing a man-to-man match. Whatever his opponent did, he managed a stroke or two better.

"It was the opening day of the National Open at Olympia Fields outside Chicago. Everybody knew that Hagen was entered, but nobody had seen him. The locker-room was filled with the famous, near-famous, and ambitious unheard ofs. As the scheduled hour for Hagen's tee-off approached with no sight or word of him reported, the place began to buzz—possibly he meant to default.

"But just then a long, low, underslung motor purred up to the door. It had a chauffeur and a footman up in front, and possibly a couple of side-boys hooked on somewhere. The footman alighted and opened the gleaming door, whereupon, impeccably dressed, with cane and lemon-yellow gloves, the great Hagen emerged, a perfect picture of Bond Street elegance and nonchalance. He strode into the locker-room, looked all around with a big, broad smile, and said, in warm greeting: 'Hello, boys! The next Open Champion has just arrived. Which of you mugs will be second?'

"As it happened, Johnny Farrell won that particular tournament, but Hagen's grandiose entry knocked half the field out of it before they even got out of the locker-room!"

In track races it is far more effective to pass a man at a good rate of speed, rather than barely crawl by. Slight speeding up can't match this pace, so the passed runner will tend to let one go. In long-distance races it is common to call out, "Better get a bicycle if you expect to keep up with me," or if one is passed, "That sprint won't last long." A famous golfer suggests to his adversary after a poor shot or two, "Some days they just won't go right, will they?" This sounds sympathetic but really suggests that the poor playing will persist over the whole round. Naturally one should avoid poor

sportsmanship, and perhaps some of these latter examples are of borderline taste. But a little use of practical psychology is no more amiss than playing an opponent's weak backhand or calling a line buck through the weaker side of a line.

C. Tension

As we pointed out in several places—working conditions in industry and psychiatric principles, as well as earlier in this chapter—fatigue from tension, worry, and strain add decidedly to that caused by physical exertion alone. Coaches often have a serious problem confronting them to keep their men from worrying so much that they are below their true ability when the actual contest comes around. We often see in important contests very poor tennis, golf, high jumping, and other performances in sports calling for poise and delicate coordination. The athlete is unable to relax and keep normal control over his muscles, so does much more poorly than in practice.

College football teams are perhaps the worst offenders. If a big game is out of town they will be cheered when leaving, having thought of nothing but football for weeks, and everything emphasizes the importance of the occasion and the grim necessity of winning. If the game is at home, the team may be isolated at a country hotel, with guards to keep away visitors. Having no one but themselves to talk to, the tension naturally keeps increasing. It is no wonder that some teams crack and give a performance far below their usual level. It is one thing to be serious and determined, another to act as if the fate of the world depended upon one game.

An instructive story is told about how the manager of a team in a World Series relieved his team of tension. It is always a strain to play in such an affair, and this series had lasted so long that both teams were playing rather poor ball. They were tied at three games each, with everything depending on the morrow's contest. The manager summoned all the players to his home that evening, presumably for a conference. As each arrived he was greeted at the door with a bottle of beer, and told to join the party. They had an evening of jollity and mild relaxation, with orders not to mention the coming game. They won that, 7-0. While this is a single instance and there is no proof that they might not have done as

well anyway, experts noticed a distinct change of form in pitching, fielding, and batting.

We might add that one must learn to accept a few tough breaks or opponent's good luck without getting unduly upset. Some are bound to come in every contest, and if one frets over them he will only increase the likelihood of more coming. Those who have become champions over others of approximately their own level of ability have done so largely because they have mastered their tempers. One wonders how many potentially excellent athletes have never risen to the top not because of mechanical shortcomings, but because they couldn't control their tempers, lost their poise, got rattled in a pinch, or couldn't keep calm after a tough break or two.

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CHAPTER XXXIV

PERSONAL PHYSICAL EFFICIENCY

I. Introduction

In this chapter we wish to give evidence and suggestions on several topics of physical efficiency which we all encounter in daily life. We shall not attempt exhaustive surveys of any of the topics considered, but shall give evidence from one or two leading experiments on most of them. Also we shall not preach from a moral or ethical standpoint, but shall confine ourselves to individual matters of personal health alone. By being fit one can live a much happier and more effective life. A rich man who has ruined his health by overindulging physical desires can no longer genuinely enjoy life. The healthy poor man with a good appetite and physical vigor is much more to be envied. It is from this standpoint that we intend to treat our arguments and facts. We shall further point out some popularly accepted fallacies in connection with several of our topics.

II. Fatigue

We have already discussed the problems of fatigue, particularly as related to industry, in Chapter XVII, so shall only review a few of the conclusions which may apply to daily life.

Fatigue is natural and is to be expected following muscular exertion or work of any sort. But obviously this does not suggest that the more tired one is the better. Efficiency and enjoyment of work or recreational activity can be increased by reducing unnecessary fatigue. This may be brought about in two ways: first, by

preparing for work through obtaining adequate sleep, by exercise to build up stamina, and by healthful dietary and other living habits; secondly, by following certain principles of work and rest while working.

There are four main points in reducing fatigue at work. (1) Energy will be conserved by eliminating useless movements. (2) Rest periods, introduced from time to time, will delay fatigue. Frequent and short rest periods are suggested; the heavier the work the more often and the longer they will need to be. (3) Change of work relieves physical fatigue little, but may reduce the boredom which causes decreased efficiency. Only rest will rebuild the body after genuine physical fatigue. (4) The more complete the rest the more satisfactory it will be. Lying down in quiet, without even reading or speaking, is most effective.

III. Exercise

Animals and primitive men live very active lives, and there is no evidence which would suggest that our bodies have so changed that exercise is not still beneficial. Naturally one whose work calls for strenuous exertion need not think of any further effort, but most white-collar and professional individuals seem to be better off for some regular exercise.

It must be admitted that the case for exercise has not been finally proved. The average span of life of athletes is a few years above average, but their physiques are presumably better to start with, hence the statistics do not demonstrate causation. At the same time it may be that too much or too long-continued exercise *may be harmful, especially after middle age.*

But for younger persons, and in moderation, it has a number of benefits. It helps the appetite, keeps elimination regular, opens the pores, and usually gets one into fresh air and sunshine. Another merit, and one which many people consider the greatest point in favor of exercise is that one gets relaxation from business activities. If one remains in his office or home he may not be able to forget his routine cares and worries. For this reason, a game like tennis or golf is preferable over routine calisthenics or a walk.

Most of us after college graduation cannot keep in top condition, and must exercise restraint over output of energy. One whose job

is confining and fatiguing might better restrict his sports to say three times a week for an hour. Men who can exercise only over a week end should be even more careful. There is a tendency to crowd in all the golf, tennis, or swimming possible in a short two days. Medical authorities say that this does more harm than good; 18 holes of golf is a maximum, and even 9 should suffice for one who is definitely out of condition.

IV. Relaxation

We previously pointed out that one of the greatest causes of run-down condition is worry and strain, tension from work and from life's problems, rather than the work itself.

The constant tension surrounding the work of leading business and governmental executives has become a source of real concern. Journals on industrial management have frequent articles pointing out the problem and suggesting various remedies, particularly periodic physical examinations to detect the beginnings of heart or kidney disease, high blood pressure, hardening of the arteries, and so-called nervous exhaustion. While this will not relieve the tension, remedies can be applied before serious results ensue. More constructive, perhaps, are longer vacations, provision of more capable assistants, insistence on closing the place of work at the end of the regular day, and perhaps most important of all the delegation of minor responsibilities to one's staff. The old saw, "Lincoln died in office, and the United States still kept on running," can be applied to the executive who takes himself too seriously and thinks that his firm will fail if he takes a vacation or quits at five o'clock.

It is unfortunate that in our present society a man has to have lived many years before he is considered to have accumulated enough maturity, experience, and wisdom to be entrusted with the fate of a large corporation or state or federal government. So he gets crushing responsibilities piled on his head at an age when he should begin to take things a little easier. The fate of our recent Presidents has driven this home. Wilson was an invalid long before he left the White House; F. D. Roosevelt died suddenly at the age of 62; Coolidge, presumably much more relaxed than most, died soon, after leaving office; Hoover, always an unceasing and

tireless worker, wanted nothing but months of rest when he retired from the Presidency. In contrast, at one time there were six widows of former Presidents still living.

Granted such political or industrial responsibilities must be great and cannot be minimized beyond a certain point, what might we suggest? Relaxation has been the subject of many articles and several books, of which *Progressive Relaxation* by Jacobson (6) may be mentioned. A typical hypothetical example is that of a businessman a little over 40, in perfect health so far as physical examinations can detect, but always tense, overalert, unable to sit still for any length of time, not exactly fidgety but frequently moving some part of the body as if he were uncomfortable. He always has to be doing something definite; he cannot for example watch a sunset out of the window or listen casually to a radio program. Even at night he spends sleepless hours thinking about business and personal worries.

Measures often used, such as warm baths or massage, sports or vacations, change of scene or occupation, usually effect only moderate and temporary relief. Drugs fail to provide even the distractions of these substitute activities, and after a few dosages may leave the person worse off than at the beginning.

Jacobson gives specific instructions for relaxation, which must start with muscular relaxation. The highly nervous person has difficulty relaxing a muscle as completely as the calmer person can when he lays his arm along a table or his whole body flat on a bed and lets himself go. He must learn controlled relaxation just as definitely as one learns any act of delicate skill, except this is negative instead of positive. One seeking such quiet of muscle and nerve must relax progressively the large muscle groups, one after another, starting say at the lower limbs and working upward. The author says, "It is physically impossible to be nervous in any part of your body, if in that part you are completely relaxed." All tension must be dispelled; and this is learned, since as Jacobson says the untrained individual displays some residual tension even when lying at full length. The forehead may wrinkle, eyeballs move, eyelids twitch, a finger wiggles. If he is worried certain muscles may remain tense, often the involuntary musculature of the intestine and bowel.

One who needs such relaxation should practice it daily, and devote a certain period each day to this relaxation. Who needs it? Each of us can give his own answer, and there should be no doubt if you do need relaxation. Perhaps ability to do nothing for half an hour and to go to sleep within a reasonable time are as good criteria of relaxation as any.

V. Sleep

Although a few have deplored sleep as a waste of time, it is clear that it is necessary to restore energy consumed during the day. Rest is only relief from fatigue in the midst of working hours, and sleep is better still, since metabolism is only a third the rate of even lying flat and completely relaxed.

Of practical value would be the answer to several questions. What is the effect of loss of sleep on physical and mental efficiency, as in military operations, students studying late before examinations, or athletes awake before a contest because of nervousness and perhaps in a strange hotel or on a sleeper? What about reduction of hours of sleep, as well as prolonged periods of waking? How much sleep does each one of us really need?

The writer is of the opinion that sleep is the most important single necessity for health and efficiency. Some people watch their diet, tobacco, and liquor consumption, take coffee sparingly, yet pay little attention to going to bed in proper season. It seems to us that an hour's loss of sleep several nights in a row can do more damage than anything but intemperate use of cigarettes, coffee, or alcohol. If a person is not well rested, he will not have the proper vigor, will not be alert, and cannot do good work.

Quite a number of experiments have been done on subjects kept awake for continuous periods of 48 to 100 hours, and strangely enough the results have been much lighter than one might expect. Edwards (2) kept 17 subjects awake for 100 hours, giving them a series of about a dozen tests every morning. The students were under constant surveillance of the college physician to detect the beginnings of any harmful symptoms. The tests were as follows: reaction time, speed of tapping, aiming, hand grip, hand steadiness, body sway, puzzle boxes, color perception and discrimination, visual

acuity, depth perception, intelligence test, and memory for nonsense syllables and digits.

On simple tests, such as hand grip and hand steadiness, little difference between the experimental and control (normal sleep) groups appeared. Amount of sway, otherwise designated as imbalance, increased steadily and became highly irregular as sleeplessness accumulated. In intelligence, a more severe task, a marked drop occurred. Whereas the subjects who volunteered for the experiment averaged at the 60th percentile in a control test before the loss of sleep period commenced, they fell to the 40th and 34th percentiles after 72 and 96 hours of waking. Two weeks later, after 'catching up sleep and energy, they averaged at the 76th percentile, which suggests some practice effects. Memory for nonsense syllables declined, but not materially until the fourth day, whereas no valid differences were found in the digit-memory test.

Edwards made the same observation that other experimenters in this field uniformly note, that subjects became overpoweringly drowsy, inattentive, irritable, restless, and indifferent. As the experiment progressed they had to exert effort to keep awake and to concentrate on the tests. That their scores did not fare worse than they did was due to strenuous efforts expended, rather than to the possibility that loss of sleep is not consequential. A further note is that women came through the experiment as well or even better than men, and that the stronger and more athletic men suffered the most.

Not too often are groups of people compelled to be awake for days on end; perhaps of greater significance is a measure of effects caused by reduction of sleep over periods of time. This would be more characteristic of military or business activity under continuous high pressure. Laslett (7) reduced the sleep of several subjects by 40 per cent (say from 8 to 5 hours) on five successive nights, and compared the performances with those of the same individuals on the four previous days. There was loss in all sorts of motor and intellectual functions, such as code translation, addition, accuracy in following a swinging pendulum, body sway while standing, and intelligence. Losses ranged from a few per cent in the simple tasks to 15 per cent in the intelligence examinations. Blood pressure and pulse rate were also affected, showing some real physio-

logical influences. One night of normal sleep seemed to provide total recovery.

There is the possibility that with many individuals sleep could be reduced slightly, say from 8 to 7 hours a night. No such test on effects of slight reduction has ever been conducted. There are no doubt wide variations in the amounts of sleep various individuals require. Many seem to need 8, while others thrive on 6 or even fewer hours.

In addition to the length of sleep, there has been some discussion as to when it should be taken. The statement that "one hour of sleep before midnight is worth two after" has been widely bandied about. It has been founded, probably, on the fact that a person does sleep more soundly, in terms of the volume of noise required to wake him up, during the first couple of hours after going to sleep. There is no evidence, however, that this would not be true no matter at what hour he went to bed. If there is anything to the saying it is most likely related to conditions in the external environment. If one goes to bed after midnight he usually has to get up at the same hour as usual, so that much sleep is lost. Even if he does not have to get up early he may be wakened by the light, noise, and warmth, particularly in the summer months. Sleep from 9 to 5 would include the greatest number of hours of darkness, but society seems to be getting farther and farther away from these limits, advancing the hours at both ends.

Following up the idea that sleep is soundest right after dropping off, it might be that splitting rest into two periods would be beneficial. The writer conducted such an experiment (5), having one college girl as a subject (admittedly an insufficient sampling). She slept from 11 to 2, and 5 to 8, for a month, and spent the waking time reading, studying, and sewing. Her results on motor tasks, discrimination, steadiness, and intelligence tests were compared with scores during the previous month when she slept 8 hours consecutively. The differences in performances between the two months were negligible, and failed to point to consistent superiority either way. It is to be noticed that when sleep was split, only 6 hours were spent in resting as opposed to 8 under the control conditions.

VI. Diet

There are two chief aspects of diet—quantitative and qualitative. The first refers to the amount eaten, the second to the elements making it up.

Vitamins, a qualitative aspect of diet, have come in for a great deal of attention, both scientific and advertising. At least half a dozen vitamins, capable of producing or preventing various effects, have been isolated. They prevent rickets, scurvy, night blindness, loss of appetite, etc. They exist naturally in fresh fruits and vegetables, milk, eggs, and sea foods. Utter lack of a vitamin will cause characteristic disorders of the bones or other tissues. A number of foods have been put on the market which are claimed to carry naturally or to be "fortified" by synthetic processes with vitamin-bearing substances. Spinach, tomato juice, violet-ray treated breakfast foods, and cod-liver oil are prominent examples. Certain minerals also seem to be necessary.

In spite of these discoveries, level-headed authorities are skeptical about the necessity of watching and balancing one's diet as carefully as all that. The average individual derives all he needs of qualitatively necessary materials (salts, iodine, etc.) from his normal diet. All these are present in many, not just a few, foods. Some persons need special items: young children in winter or if there are any physiological problems, pregnant women, individuals with *thyroid or calcium deficiency or anemia, and persons living in* desert or arctic environments where food supplies are very limited. Apart from such cases it is making a mountain out of a molehill to feel that one is endangering his health if he lets a day go by without eating fresh fruit, or a salad, or tomato juice, or cod-liver oil, let alone ingesting a few pills. Animals have been found to thrive best when presented with a variety of foods "cafeteria fashion," and allowed to do their own choosing. Possibly our desire for one item of diet today and another tomorrow is a reflection of chemical needs.

Evidence on quantitative dietary deficiencies are more spectacular than practical in importance. Very few people, at least in this country, actually get too little to eat; in fact most of us probably eat nearly twice as much as we really need. For freak exhibition

purposes several individuals have gone for 30 or more days without eating, without serious results. Water is necessary for life; a person cannot live more than 10 or 12 days without replacing liquid in his tissues. During starvation there is considerable loss of weight and the individual is careful not to expend too much physical energy, but his sensory, motor, and intellectual abilities seem to remain up to normal.

During World War I, Benedict, Miles, Roth, and Smith (*1*) conducted a very interesting experiment on the effects of prolonged restricted diet. A group of college men was maintained at a weight 10 per cent below normal for the majority of a school year. They were carefully tested on physiological and mental functions at regular intervals. The results were compared with the same measures made on fellow students who were left up to normal in weight. In general the low-diet group did not suffer at all seriously. In most tests they were about equal to the controls of normal weight. Their physical energy was reduced somewhat, as they felt that they had a little less reserve than usual, and their pulse rate was more affected by exercise and took longer to return to normal. Yet some of them were able to make athletic teams, which showed that the loss could not have been especially severe. An interesting fact was that they had less tendency to be drowsy in classes immediately after lunch, since their meal was so much lighter. A startling result was that after the test was over practically every man gained a great deal of weight, rising to a level well above his former figure. Apparently the system had become so efficient in caring for the reduced amount of foodstuffs that a return to normal quantities was accompanied by the gain in weight. One example was the captain of the cross-country team who became so heavy that he could no longer make the team.

VII. CAFFEINE

The great majority of people drink coffee one or more times daily, and the same general ingredients are found in tea and cola drinks. Along with its widespread use there has grown up a list of superstitions. Coffee is said to be harmful for growing children, yet grade and high-school children are allowed "cokes"; it keeps some people awake nights, whether from suggestion or actual

pharmacological effects; and often when one is a little run down his doctor will tell him to ease down on coffee intake.

Physiologically caffeine operates as a slight nervous and circulatory stimulant, but like many drugs it begins to have depressant effects in quantities beyond a certain point. Blood pressure is raised, which may account for sleeplessness, since relaxation is not complete. Due to this same effect, fatigue seems diminished, although this is not physiologically true.

In spite of much talk about the slight stimulating and insomnia-producing properties of caffeine, there has been very little experimental work. Hollingworth (3) conducted a very thorough and well-controlled experiment. Attention is called to the great care with which he planned his tests. Instead of giving caffeine the usual way, through coffee, he administered caffeine syrup in capsules. Thus he could tell exactly how much he was giving, which would be impossible to control with any of the usual methods of making coffee. The subject could not tell whether he was getting a large or small dose, or even a capsule filled with some neutral substance. With any drug there is a good deal of suggestion. People have been known to develop severe headaches if they missed their morning coffee, but get through the day in fine shape after drinking a substitute which contains virtually no caffeine, without knowing that it was not real coffee. To control his experiment further, Hollingworth gave the doses at exactly the same hours each day, did not allow the use of caffeine-containing beverages at other times, made the subjects observe regular eating and sleeping habits, and had his tests thoroughly standardized and administered by trained experimenters. Testing was carried on over a period of 40 days.

We present a summary of the results in Table 81. The plus and minus signs mean a gain or loss, respectively, in time or other measure. None of the tests showed very serious changes, most of the variations from normal being only from 1 to 5 per cent. We may, therefore, interpret the results as inconclusive. What divergences occurred are small and can easily be produced by fluctuations on the part of a few of the subjects.

Sleep disturbances were very slight with small doses, but somewhat greater with larger quantities of caffeine, particularly when

TABLE 81. Effects of Various Dosages of Caffeine

	Effects			
Test	*Small Dose*	*Medium Dose*	*Large Dose*	*Duration*
Tapping	+	+	+	2-4 hours
Three-hole steadiness	+	=	−	3-4
Typewriting				Results show only
Speed	+	=	−	in total day's
Errors	Fewer for all doses			work
Color-naming	+	+	+	3-4
Opposites	+	+	+	Next day
Calculation	+	+	+	Next day
Discrimination-reaction time	−	=	+	Next day
Cancellation	−	?	+	.....
Resistance to size-weight illusion	No changes			
Steadiness	?	Unsteadiness		3-4

Note: + score indicates increases, which are sometimes unfavorable, such as errors made or time to complete a task.

taken near bedtime. The effects varied inversely with body weight, which is another general characteristic of drug effects. Caffeine effects did not seem to vary with regularity of the habit; nondrinkers failed to suffer any more than habitual users, which shows that there is no particular habituation to this drug.

VIII. NICOTINE

This is another subject on which there is a good deal of prevalent superstition. Smoking is supposed to stunt the growth, shorten the wind, impair muscular control, shorten life, and even lead to criminality and immorality. Just where these ideas started is uncertain.

It has been found that more honor students in schools and colleges do not smoke than do use tobacco, that the best athletes do not smoke, and that a greater percentage of juvenile delinquents smoke than the average for boys and girls of the same age. But we appreciate that such correlations do not necessarily prove causation. It is more likely explainable in another way. Since there is a preju-

dice against smoking, especially for adolescents and athletes, rules against the use of tobacco are laid down along with others on dietary and daily habit lines. These latter may have some foundation. Now, those who violate one rule will usually also defy authority in other respects. The athlete's poor showing or the youth's delinquency are blamed on smoking, whereas the loss of sleep or "evil companions" may have been the true causes. There is no evidence that smoking alone harms people who follow health principles in other respects.

It has not even been proved that athletes are harmed in the slightest degree by use of nicotine. It is said that in one Olympic 800-meter race an Englishman was seen puffing on his pipe shortly before the start, laid it down, and broke the world's record. No doubt he followed other training rules, especially those of diet and sleep.

Hull (*4*) has contributed a very ingenious and careful experiment on one phase of nicotine use. He studied, as he states, not the whole problem, but the effects of smoking a pipe twenty minutes, an hour and a half after a meal, without inhaling, and traced the effects for an hour and forty-five minutes after smoking. Attention is called to Hull's modesty in thus outlining his purposes; he does not claim to be settling the whole tobacco question, nor even the whole of one phase of it.

Nine smokers and nine nonsmokers were tested for three-hour periods daily for eighteen days. They took three consecutive puffs in rapid succession every twenty seconds, while blindfolded, the experimenter holding the pipe. Hull used a very clever means of eliminating suggestion by having a control dose. Inside a pipe identical with that used in smoking real tobacco he placed a plaster core, which could be soaked with water and which was heated by an electric coil. Thus the subject took in only warm moist air. To provide the proper atmosphere (tobacco odor) the experimenter smoked in the room, although he did not blow any toward the subject. Only once did anyone suspect that he was not getting real tobacco. The others were fooled completely, and one person even sat blowing smoke rings while puffing on the dummy pipe!

The most marked results were an increase of about six heartbeats a minute and a marked increase in muscular tremor. The heart

rate was still accelerated almost two hours after smoking, but muscular steadiness had returned to normal in an hour and a half. In reaction time, learning nonsense syllables, and cancellation there were no appreciable differences. The figures for the two groups never varied by more than a few per cent, and what fluctuations there were did not lie consistently in one direction. In some tests the results were more marked in the case of nonsmokers, but even here the variations were not consistent.

Inhaling, a common smoking habit, was ruled out of this experiment, so the extent of generalizing the results is that much limited. Most cigarette smokers seem to inhale, although fewer try it with pipe or cigar. It may be that one who does not inhale does not really absorb much, and that inhaling might bring out greater effects. This is an unsolved question. But certainly we can say that smoking without inhaling has not been shown to do any real harm.

IX. Alcohol

Interest in this drug probably surpasses that for all others combined, because of the dramatic and even disastrous effects following immoderate consumption. Unlike caffeine and nicotine, it is impossible to deny its effects on motor, intellectual, and emotional functions.

Actually, alcohol is a depressant rather than a stimulant. The apparently stimulating effects really represent a double inhibition. Normally one exercises some restraint over conduct and conversation, but alcohol inhibits this inhibition, with the result that social occasions are enhanced in their spontaneity. The enhancement is only in quantity, however; one who remains perfectly sober realizes that the conversation appears brilliant and witty only because the others are not in condition to judge its superficiality. The fact that a tired person may pep himself up for the evening by a cocktail is not contradictory; he is only covering up the fatigue just as aspirin may relieve a headache but not remove its cause.

Alcoholic effects are not, as seems to be assumed in private conversation where quantities are the only variable mentioned, simply proportional to the amount taken in. There are a number of other complicating factors. The chief is the weight of the individual.

The effects appear when alcohol gets into the blood stream, hence are principally proportional to the percentage concentration in the blood (see Fig. 25, Chapter XIX). This would mean that with other conditions equal, a person weighing 200 pounds should be able to drink 20/12 the amount of one weighing 120. Another important factor is the amount of food on the stomach. If taken with or just after a meal the effects are spread out and minimized, but if before a meal effects will come almost immediately. Fatigue and poor physical condition will accelerate and intensify effects, sometimes tremendously. Habituation seems to take place; steady drinkers can absorb more than abstainers or occasional users, which fact partly invalidates tests of intoxication measuring nothing more than alcohol in blood stream or urine.

Accuracy falls off far more than does speed, according to an experiment by Miles (9). He tested a number of young men, all of whom were experienced typists, with carefully controlled doses of diluted pure alcohol. Their speed in copying material fell off only a few per cent, but errors increased as much as 72 per cent. At the end of three hours there had been some recovery, but alcohol could be detected in the blood as late as six or eight hours after intake.

There has been considerable debate as to how concentrated a dose will have to be to produce noticeable results. This has very pertinent application to legalization of lighter drinks, such as near-beer, in localities which prevent sale of what are termed intoxicating drinks. Three and two tenths per cent seems to have been accepted as the dividing line. An experiment was tried on the effects of this amount of concentration. College men, all moderate drinkers, were given five bottles of beer at 20-minute intervals, with nine tests administered during each period. Control groups were given equal amounts of near-beer (less than one half of one per cent) and were tested simultaneously with the experimental groups. This kept conditions as nearly identical and controlled as seems possible in this practical situation. In spite of the rather large amount of beer, in terms of usual social consumption, there were no marked differences in performance. Tests were: strength of grip, speed of tapping, steadiness time and accuracy, spool packing, color naming, card sorting, hidden words in pied type, multipli-

cation, and code substitution. Toward the end there was a loss of about three seconds in sorting a pack of cards, but on the other hand the 3.2-beer group was a little faster in code substitution than the near-beer subjects. In the other tests performances remained about equal.

It will be appreciated that these results apply only to beer of 3.2 concentration, and not to stronger liquors. Possibly the worst effect of liquor consumption is, as discussed in our chapter on safety, on judgment. The driver takes chances he would not consider when sober. When one is partially intoxicated he does not realize his limitations. Miles cites the case of a shorthand expert who swore that his pencil fairly flew over the paper. But when his work was checked, it was found that he had been slightly slower than usual and had made far more errors. We have all seen a person who has become quite affected, yet protests vehemently that he isn't showing the slightest effects.

Experiments using stronger quantities of alcohol, either pure or in whiskey or other liquor, show that the higher and more complex processes are affected more seriously than simple ones, such as reaction time or sensory acuities (*8*). Possible personality effects were measured in one test, where subjects were given three ounces of whiskey in cocktail form in a 30-minute period. They were then asked to take the Minnesota multiphasic test of personality, which was designed for psychiatric use, but which can be applied to normals to detect such symptoms as hypochondriasis, depression, hysteria, paranoia, and psychopathic tendencies. In spite of the fact that the amount of whiskey taken made them rather talkative and unsteady in balance, no differences in test scores were observable as compared with their control scores three weeks previously.

X. Regulation of Habits

We have tried to preserve a common sense as well as scientific attitude in our discussion of the various topics which bear on health. In most cases we have found that popular—and sentimental—opinion greatly exaggerates the importance of avoiding or of including certain items. Coffee and tobacco have no material effects, except possibly when taken in excess. Under usual conditions diet is satisfactory, without careful study and deliberate attempts to

include varied items. People have lived to tremendous ages in spite of (or maybe because of) excessive use of all sorts of "harmful" things. Others who were models of physical-hygiene virtue have died at an early age.

With alcohol the situation is a bit more complex. We cannot deny that intake of considerable quantities can cause serious temporary disturbances. In a few cases prolonged excesses will lead to delirium tremens and even to mental and physical incapacity, although these occur with far less frequency than fanatics would have us believe. But we cannot detect any serious damage, temporary or permanent, resulting from small quantities of any liquor, or even from rather large amounts of the less powerful beverages. In fact, statistics reported by Pearl have shown that moderate drinkers actually live somewhat longer than total abstainers, although heavy drinkers do die a bit earlier than expectation. Why moderate use and longer life should go together (and there seem to be cases enough so that the figures cannot be considered accidental) is an open question. Perhaps those who claim health-giving properties for beer would have a right to seize on these facts as avidly as temperance advocates would take those on the heavy and steady drinkers.

	Males	*Females*
Total abstainers	60.05[a]	58.49
Moderate and occasional	61.04	61.70
Heavy and steady	55.37	47.50

[a] All figures in years.

Dr. Logan Clendening sums up this situation very adequately when he rather facetiously makes this statement: "I am not trying to furnish any material for propaganda in either direction. If a man resolves to abstain from alcohol, and even if he is passionate in his belief that that is the best thing for him and his labour, I am prepared to applaud and avoid him." In other words, a little drink does no harm and often promotes good fellowship. One who does not wish it is not compelled to take it, but he has no factual grounds to prevent other people from living their own lives as they see fit.

Pearl also collected data on tobacco usage and longevity, dividing his groups into heavy, moderate, and nonsmokers. It was found that the amount of smoking was statistically associated with a de-

crease of life duration, and the amount of this impairment increased as the amount of smoking increased. Women were not studied.

What, then, should we do? Do habits make no difference at all? It would seem that we cannot improve on the advice of the Greek philosopher who said, "Nothing to excess." This would apply to work, fatigue, exercise, sleep habits, coffee, nicotine, and alcohol. The human body is admirably equipped to take care of moderate changes in internal or external environment, but like any machine will break down under excesses. Moderate abuses, or perhaps more appropriately termed "uses," seem not to cause the slightest harm. One may smoke, drink coffee, and drink beer about as he wishes; he can stay up late occasionally, and not necessarily exercise every day, and still keep in excellent shape for purposes of everyday working life. Marked irregularities, particularly loss of sleep, may result in a general run-down condition.

It may appear that even this general advice is not supported by facts, since we can find exceptions to every rule. It is probable that these are just that—exceptions. Most of us have to exercise certain restraints to keep fit. This is all we can suggest.

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CHAPTER XXXV

EFFICIENT STUDY HABITS

I. Purposes of the Chapter

By the time one has come to college he has had 12 years of practice in studying. According to the law of frequency we might suppose that his study habits would be nearly perfect. But none of us would make such an extravagant claim for himself. The majority of students go about their work in pretty haphazard manner. The mere fact that one is passing all his courses does not prove that his study habits are satisfactory. We suggest that the following classes of students can profit from using the recommendations given in this chapter: (1) Those who are passing now, but wish to earn better grades. (2) Mediocre students, who are having trouble getting by and who want to make more satisfactory records. (3) Students of poorer promise, who cannot succeed in college unless they carry on with a high degree of efficiency. (4) Persons who wish to spend the least amount of time studying compatible with reasonable success, in order to devote extra hours to self-support, writing, music, athletics, etc. These latter are not, like the other groups, interested in doing better, but in doing as well in less time, which goal demands increased efficiency. Actually, it is almost always students who are already above average who take seriously recommendations about study efficiency. Most of the others either have too little foresight or too little ambition to wish to improve their standings.

A number of universities are now attacking this problem, either by giving courses in how to study, optional or required of freshmen, or by suggesting to the individual departments to give hints to

their students on how they can study that particular field in the most profitable manner. The suggestions we shall give should apply equally to all fields.

Before plunging into the recommendations, we wish to emphasize that we appreciate the human elements in the situation and are not demanding anything unreasonable in either time or effort.

II. General Policies in Study

A. Serious Study Habits

The famous philosopher Aristotle said to his equally famous pupil, Alexander the Great, "There is no royal road to learning," when that prince chafed under the drudgery of study. This is as true now as it was two thousand years ago. Learning is an active process; little of more than casual nature is soaked in by mere contact. One profits in proportion to effort put forth. The psychologist can suggest some rules of efficient study, but he has no tricks for easy learning, lasting and accurate memory, or short cuts to high grades without genuine hard work. Many students have vague and professed intentions of doing well, experience twinges of regret when marks show them to be doing only mediocre work, and make resolves to do better next time. But to achieve a real degree of success one must not only intend to do well, but must make of college work a full-time job, keeping up his work every day, allowing few exceptions to interrupt his schedule, and making some sacrifices of pleasant diversions.

A rather common reason assigned for a perfunctory performance is that the content of courses does not seem applicable to later life. A student will say, "I only got a C out of Medieval History, but I have as much of the general idea as those grinds who got an A. What difference will it make ten years from now whether that battle happened in 832 or 875?" There are at least two pertinent answers to this. First, a student must have facts at his disposal before he can claim real comprehension. The excellent student has both more facts and a greater understanding of the whole course. Second, and more important, the mediocre student is getting into sloppy habits which are difficult to change when a superior performance is essential. Some students who intend to enter law or

other professional school often justify previous indifference on the basis that they will "turn over a new leaf" when they are admitted to that school, but they will find themselves unable to concentrate thoroughly on the more difficult material, and find their "playboy" habits still continuing.

B. Amount of Time to Be Spent

Frequently students ask how much time they are expected to spend on daily assignments. This cannot be answered summarily, since learning ability varies and the length of assignments is not always the same. In general most colleges expect two hours outside work for each hour of lecture or recitation. It is probable that few students actually do put in this schedule, which would call for about a 45-hour week, 15 of classes and 30 of study. Those who do are usually among the scholastic leaders.

Many instructors prefer to assign a larger body of work which will be called for at the end of the week or at the next hour examination. A number of chapters or even several books may be assigned, and the student will be expected to budget his own time. For reasons to be discussed later in the chapter, principally those of distribution of practice, it is advisable to do this work gradually over the entire period rather than attempt it all in the last day or two before the test.

C. Study Thoroughly

One should not study by the clock, but until the assignment is thoroughly done. Understand all the points brought out, recite them to yourself, and satisfy yourself that you have grasped the material well enough to retain it for weeks or months, as necessary.

D. Study for Comprehension

If the student does not understand the material, by itself and as related to other things, he is not deriving much benefit from his education, even if he does pass examinations. Such information will do little good for the future. To do this one must think, and use dictionaries, encyclopedias, and reference books to fill in any gaps he may have in his comprehension.

Many experiments have demonstrated that meaningful material

is both more rapidly learned and better retained. This means that a student who understands thoroughly what he is reading will be that much better able to reproduce it on an examination. If one studies out the whys and wherefores of a statistical formula he will always be able to recall it, but until he has done so it will remain a jumble of radical signs, squares, plus and minus signs, etc. As one student said:

"When I started geometry I had a bad time. I just couldn't give proofs on an examination or in class recitations, and my work was really a flat failure.

"Suddenly I realized that I had not been reading it to understand the steps of reasoning. I had been reading the propositions and demonstrations, and guess I had been more or less saying to myself that it all sounded reasonable, and dismissing it with that. Naturally I couldn't give it back later."

Recitation is a good test of understanding. It has been said that if one cannot explain something logically he does not understand it clearly himself. Perhaps this ties up thought and language rather closely, but language is our principal means of communication, and if we cannot express our thoughts in coherent language they are not serviceable. If you have trouble putting your thoughts in words, they are certainly hazy in your own mind, and you should study some more and try to express them more clearly.

E. Look for Points of View

In many courses, especially in advanced work, much of the material is controversial. One should see which side the author is taking, and why. Do not condemn him if he happens to disagree with a previously read authority. The instructor will have chosen his material carefully, and he wants you to get representative and diverse opinions of leading men in the field. Knowledge is not absolute. Controversial subjects are taken up both because they are too important to omit until they are settled (if ever) and because the student is given practice in thinking and weighing evidence.

Avoid dogmatism; just because the other man happens to disagree with you or someone you respect does not mean he is wrong.

There are at least two sides to most questions. Each man has his own reasons for being a Republican or Democrat, Baptist or Catholic, hereditarian or environmentalist. His reasons are as good or better than yours for holding the opposite position.

In literature courses one must watch for the views and style of the author as much as for the plot of the story. Too many students forget this, stop when they have finished reading, and trust to luck to be able to answer questions on subjects which should demand previous thought. In advanced language courses it is assumed that one will have acquired grasp of the vocabulary and grammar; mere translation is insufficient to develop appreciation of literary style.

F. Use Initiative

The man who gets ahead in the world is the one who is one jump ahead of the rest, whether making radical improvements in automobiles or initiating economic or social reforms. If you are not satisfied with the discussion of a topic in the lectures or reading assignments, do extra work. Supplementary readings are often suggested. If not, your instructor will be more than willing to give you extra references, and incidentally will gain a better opinion of you as a student with intellectual curiosity. Your grade may not necessarily be raised, but one who is in the habit of finding out extra information will build up such a body of knowledge that he cannot help doing well.

III. A Study Schedule

Unsystematic study is likely to be haphazardly done. Too many breaks occur, as diversions present themselves, or as one does not feel particularly in the mood to study at any given moment. Postponed work either is never done or is badly done by cramming the night before an examination.

It is especially important for the freshman to have his routine carefully mapped out. As a general rule he has lived at home during high school and has not had to do much planning. Assignments are given daily and in detail, spare hours are designated as supervised study periods, and parents often restrict one's social life to

week ends. The principal or teacher chides one if he is not doing well—something which is not done in colleges, because of large numbers, less personal contact, less frequent recitations and examinations, and the fact that he is purposely treated more as an adult.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8	"	French	Rev. Eng. & Bot.	French	Rev. Eng. & Bot.	French	"
9	"	Psych.	English	Psych.	English	Psych.	Rev. Soc.
10	"	Rev. Fr., Psych, Soc.	Library	Rev. Fr., Psych, Soc.	Library	Rev. Fr. & Psych.	Soc. quiz
11	Study French	Sociol.	Botany	Sociol.	Botany	Study Soc.	"
1:30	Study Psych.	Botany lab.	Study French	Botany lab.	Study French	"	"
2:30	Study Psych.	Botany lab.	Study French	Botany lab.	Study French	"	"
3:30 to 6	"	Sports	Rest	Sports	Rest	Sports	"
6	"	Study English	Study Psych.	Rest	Study Psych.	Study Sociol.	"
6	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner
7	"	Study English	Study Psych.	Study English	Study Psych.	"	"
8	"	Study Botany	"	Study Botany	"	"	"
9	"	Study Botany	"	Study Botany	"	"	"

FIG. 55. Sample Study Schedule for Efficient Use of Time.

We present in Fig. 55 a sample schedule of work. In drawing this up we have taken into consideration several important points. (1) Use profitably hours which are often wasted, such as right after meals or before the first class of the morning. Nothing much can be done at those times anyway, and using them for study will free more desirable hours for other activities. (2) Every hour is not assigned definitely. Our schedule is not intended to commit one to a life of unalloyed work. Ample time is allowed for extra activities, recreation, and rest. A little time each day should be spent in

casual relaxation, apart from study, writing letters, chores, etc. Thus also, slack is provided to take care of pressure before examinations, preparation of topics or reports, and any other irregular inroads on time. We have also minimized evening study. For demonstration we have picked out a fairly full schedule, including one time-consuming laboratory course. (3) Regular exercise is suggested. Most people feel better for it, and can work better in remaining hours if an hour or two has been taken out two or three times a week for tennis, swimming, or just a walk.

Most students who make out and follow reasonably closely such a schedule soon find that they get well ahead of it. Having a regular routine, they work efficiently when they do study, they make use of hours which are usually wasted, and the schedule issues a sort of challenge which spurs them on to better effort.

IV. Preparation for Study

A. Place of Study

Where possible work in a room which is devoted largely or entirely to that purpose. Working in a parlor, living room, or other place where others are not working furnishes too many distractions. A straight-backed chair will lend to concentration better than one of the upholstered reclining variety. Light should be adequate to avoid eyestrain. Not the least feature is to keep the place of study orderly. When you have finished one subject, project, or day's work, put away in their proper places all books and notes. A mess is confusing, as well as occupying space which should be devoted to the immediate task.

B. Prepare for the Whole Task

Before starting to study or write, get everything in readiness. Pencils should be sharpened, pens filled, eraser ready, paper available, and reference books at hand. Uninterrupted work can only ensue under these conditions.

C. Concentrate Thoroughly

One must learn to concentrate for long periods of time. If one does not bring himself back quickly from wanderings of attention

(which happen to everyone and seem unavoidable to the human mind) he will have complete gaps in what is retained. For those students who wish to study more efficiently in order to save time, we point out that complete concentration will enable one to do the work well in less time. One will derive more benefit from an hour of solid concentration than from two of haphazard study.

D. Minimize Distractions

Many students have to study in rather unfavorable atmospheres, such as dormitories or fraternity houses. Distractions are not entirely avoidable, but one is largely his own master. If he shuts his door, keeps quiet himself, and does not furnish distractions to others, he can minimize outside disturbances. Poor results at best will be achieved if one tries to study while in mixed company, in a coke or beer parlor, or while taking a sun bath. He spoils both the pleasure and the study. Let him study an hour or two solidly, then have fun.

E. Scan the Whole Assignment

Before reading in detail, it is a good idea to skim over the whole of it rapidly, to get a bird's-eye view of what is coming and what the principal topics are to be. By reading the titles of the various sections one will be in a better position to emphasize the different points in their true worth and to develop his thinking along with the author's.

F. Improve Reading Ability

Reading seems so mechanical that it seems hardly necessary to speak of it. Yet many adults and college students have inefficient habits. They may read more slowly than necessary, they may use too many fixations per line, or they may not vary their methods with different types of material. Reading ability definitely can be improved; clinics are maintained for this purpose in many colleges.

Skimming is a little dangerous for the amateur, and we hesitate to recommend it. But, with reservations, it is perhaps important to develop for such subjects as literature or sociology, where lengthy assignments may be given, and where viewpoints are more im-

ortant than every single word. We occasionally hear anecdotes of holars who are able to take one glance at a page and assimilate very word. In actuality, they do not, and cannot, but in subjects which they are expert they are looking for the particular author's views, and are familiar enough with the rest so they can ientally fill in the details. In subjects like mathematics, chemistry, r neurology, however, one must read every word carefully, perhaps several times.

V. Efficiency of Learning

In this section we shall suggest practical applications of laws and principles of learning and memory which have been discovered in the laboratory, use of which should enable one to carry on his study in more efficient manner. Some of these suggestions may demand a little more time and effort than one ordinarily expends, but some will actually save time, and all of them should produce far greater returns than studying by hit-or-miss efforts.

A. Overlearning

Material is fixed more securely if one practices beyond the point of barely learning it. You do not stop learning to skate when you can just navigate the length of the ice without falling down, nor call yourself a tennis expert when you can barely return the ball onto the opponent's court. No—you will keep on until you can skate smoothly, or until you can hit the ball hard and accurately. Similarly with studying. If you want to remember for an examination a month hence, you must practice it now until it is thoroughly integrated. There will be less loss with lapse of time if it has been overlearned. This is especially true with information which is of rote nature, such as dates, chemical formulae, or names of nerves. Not until they have been practiced a great deal can they be rattled off without hesitation, so that they will be instantly available at a later date upon demand.

B. Reviewing

Frequent short reviews are ideal to keep memory fresh. Major points will be rehearsed, and minor points that tend to slip will be brought back before they are too far gone. Review is especially

valuable in two places. First, right after class. Many students take notes and then let them lie cold until right before the next test. Incomplete sentences, abbreviations, names or technical terms without some expansion may become totally incomprehensible after a week or two. Careful students make a practice of retyping lecture notes within 24 hours after class, thus providing early review and filling in gaps before forgetting sets in.

A second type of review is immediately before class. One may have first studied the assignment a day or two earlier, and we would be willing to predict that a 15-minute review just before a recitation, plus a short review within a day after the class, will raise one's grade by one letter. The additional time and effort are little as compared with probable benefits. Most studying stops just at the point where a little additional effort would bring far more than proportional results.

C. Distribute Your Efforts

Many experiments have shown that distributing one's efforts over several days permits both more rapid learning and firmer retention. Specifically, if one needs to read an assignment more than once, he should do it on successive days rather than one perusal after the other the same evening. Material that tends to slip quickly is revived. Finally, attention and enthusiasm are better when one does not work too continuously at one task.

Unannounced examinations have been tried with success in some courses. While haphazard students dislike this arrangement, regular review is provided and all students have to keep up to date, since a test may be given any day. After one has reviewed the same chapters several times in anticipation of a possible test he will find that it has been very well learned, and is well remembered long after.

D. Recitation

Learning, to be effective, must be an active process. One must not only pay attention in class and keep alert while studying, but he must test his mastery of the contents. He cannot trust to luck to remember when recall is demanded. Active recitation has been found to help learning and retention in an extensive investigation

by Gates (4). He tried different ratios of study and reciting, and found that the greatest efficiency was produced by 80 per cent recitation and 20 per cent silent study. This was on both biographical and nonsense materials, so should apply to most, although not necessarily to all, school subjects. It would seem especially applicable to foreign-language words, lists of scientific terms, dates, etc., which lack meaningful associations. But in any case recitation is a means of checking up on whether one does retain what he has been studying, and whether he understands it well enough to be able to explain it coherently.

E. Interference Between Subjects

A rather imposing term, retroactive inhibition—applies to the interference of subsequent events on material which has not been very well learned. Let us assume a typical laboratory situation to illustrate this. One learns a poem, and immediately afterwards learns a second. Then he is asked to recall the first poem, and finds that, because of having learned the second he has lost more of the first than if no interference had taken place.

Applied specifically to study, three important principles of retroactive inhibition pertain (2). First, interference is proportional to the degree of similarity between the two subjects; second, it is proportional to the closeness in time of the second work to the first; and third, the more intense the second learning is the more is lost from the first. Let us apply these to study. Two rather similar subjects, such as psychology and sociology, French and Italian, physics and chemistry, are likely to interfere with each other, particularly if the topics happen to be somewhat alike yet also to some extent different. If one studies a second subject instantly after completing the first, he has more interference. Finally, he will have poorer memory of the first if the second calls for a great deal of concentration.

Summarizing in the form of practical recommendations, we would suggest as follows, in case you have to study more than one subject in a given afternoon or evening: (1) Arrange to study two entirely different types of subjects, such as mathematics and literature. (2) Rest for say half an hour between two study periods. (This warning is rarely necessary.) (3) Save a low-pressure activity,

such as writing up a laboratory report or a mechanical-drawing assignment, to interpolate between two periods of more intense concentration.

F. Memory Schemes

Often a student will inquire whether any tricks can be suggested to assist him to remember better. Usually such requests relate to material which is largely rote in nature. The basis of any such device usually lies in finding something meaningful which can be associated with something already known or easy to remember. We might mention a few devices which have worked. A statistician had trouble in remembering the street number of a friend until it occurred to him that the house number, 1369, was the perfect square of 37. This reduced the task to remembering only two figures. The height of Mt. Fujiyama, 12,365 feet, is easily remembered if one notices that the figures are the number of months and number of days in the year. Medical students learn lists of various nerves and other organs by taking the first letter of each part and forming a catch phrase from them. Orators have tried to remember the main points of their speeches, so that they could speak without notes, by associating each point with some part of the room.

The actual value of these tricks is not so much in the method used as in the active manipulation of the material, just as in recitation. Directly reciting it several times might be as good, or better, although perhaps not so entertaining as is discovering some fancy association. There is one other drawback—logical associations cannot always be discovered, say an unfactorable number, a person's name devoid of associations, or a formula without logical interrelationships. For similar reasons, elaborate outlines prepared for review for an examination probably establish memory by the very process of going over the ground in such active fashion. But if such a scheme intrigues one and keeps the mind active, go to it!

VI. Taking Notes

Notes are a shortened form of the original, taken for purposes of reviving the memory at a later date. To get maximum value one must be systematic about taking them.

Any note should contain enough meaning so that later you will

know exactly what it means. You may wish to state in addition to the topic, the view put forth, reasons, and conclusions. If these are not included you may see only a heading, such as "Intelligence, constancy," without any reminder of the arguments, supporting data, or conclusions. Complete sentences usually are not necessary.

Choice of material to record will vary with the course. Facts are of course common to all. In science, the apparatus, techniques, and procedures are important. In literature one must watch for style, treatment, and comparisons with other authors. In advanced courses which involve theory one must be on the lookout for evaluations of crucial theories and hypotheses, as well as plain factual matter.

It is suggested that lecture notes be as brief as you think will be consistent with subsequent recall. If too many are taken the mechanical act of writing will consume so much time that you may miss something important while you are writing down the last point. You must balance between recording meaningful summaries and getting overwhelmed by too much detail.

You have an advantage in taking notes from readings, since you can set your own pace and can look over the whole before you start to read in order to discover what is coming. Otherwise there is a tendency to write down too much from the first part of the reading, where everything is new to you. After skimming the whole you will be able to take down only the most important points, keep the general order more logical, and give yourself a review while rereading the text.

It should not be necessary as a general rule to take notes from the regular text in the course. Important passages can be checked in the margin or underlined to facilitate later review. It is handy also to put question marks in the margin opposite points with which you disagree or concerning which you want to ask the instructor for clarification.

Some sort of outline is usually advisable, arranged according to one's own preference. If the author of the book or the lecturer uses one, it will probably be most satisfactory to follow that. The main heads may be listed I, II, III; the subheads-A, B, C; points under these 1, 2, 3; etc. Develop and use your own method. Just

one word of caution—do not outline so minutely that the material loses meaning and connection.

VII. Writing Themes and Reports

Perhaps polished writing, like polished oratory, is beyond rules, but for practical purposes a few suggestions can assist most students in preparing better written work. In the first place, one must realize that a theme or term paper is a more serious proposition than writing a casual letter. It must be carefully prepared and usually rewritten once or even several times.

The success of writing depends principally upon preparatory organization. The present writer would say that in his experience at least 80 per cent of time should be spent in preparation, and therefore less than 20 per cent in the actual writing. Reading reference material, collecting facts, thinking and planning a term paper may require a week of preparation for each day of ultimate writing. The writing, then, is the culmination of the project, rather than the beginning.

One might proceed somewhat as follows. The topic having been chosen, one will consult a few leading books on the subject to see what major divisions present themselves. Each of these can be listed as a major division of the report on a separate sheet of paper. Then one will look up additional original references, in the form of monographs and experimental studies, and jot down subheads together with sources of discussion of that particular topic, such as Smith—Chapter 18, or Jones—Page 245. Never assume that your reading is complete when you have glanced over two or three textbooks. A text cites material second hand, and your instructor will realize you have done a more careful job if you have searched out original references.

Now reorganize. You have collected your main topics, with brief notations to yourself as to ideas to develop, and are about ready to start writing. Decide on the logical order for your major topics, then on the order of development of subtopics within each of these. Then, and only then, will you be ready to commence turning your outline into prose. The present writer always has half a dozen pages or so of outline before he writes even the first

paragraph of material such as a chapter of this text or a research article.

Your writing can now proceed at a fairly fast rate. If you have facts and opinions all assembled as suggested in the last few paragraphs, you can proceed almost without interruption, although you may find it necessary from time to time to consult again some of the references to make sure you have gotten the exact meaning of the author. Writing this fast will make reading that much smoother. One who writes before he has organized and thought out his explanations and conclusions will give his reader a jerky, laborious style to read.

Hints on style are not the province of a psychologist, but I might remark that in a number of years of reading term papers and theses I have had to make many more corrections of grammar and even of spelling than of psychological thought. Concerning ourselves more with the problem of conveying meaning to the reader, let us suggest watching your sentences and paragraphs. Eliminate excessive subordinate clauses, and break in two any paragraph in which there is an abrupt change of thought. Writing will be smoother, and your reader's comprehension easier.

Finally, recheck and rewrite. First draft material is out of place in a serious college theme, term paper, book review, or thesis. It is assumed that what you turn in to the instructor is second or third draft, with some sections like the introduction having been rewritten half a dozen times. Exercise your function of self-criticism, which is one of the major attributes of an intelligent individual. One competent to undertake higher education should be able and willing to criticize himself, tear his own writings to pieces, express them better in a second attempt, and reorganize into more orderly sequences. Sentences may be placed elsewhere, and paragraphs interchanged.

You will probably want to improve your introduction and conclusions and some portions in the midst of the exposition. What is not entirely clear to you will be even more cloudy to an outsider, so rewrite any such passage. What seems thin will fail to convince the reader, so obtain additional reference material. Where there is repetition, cut out or shorten.

It hardly needs to be mentioned that in present days anything of business or professional nature is typed. It looks more business-like, is more easily read, and gives a better impression of yourself. We hesitate to refer to such crass things as grades, but a typed report never harmed a student's standing, and a handwritten one is harder to follow and may not earn its intrinsic worth.

VIII. Taking Examinations

A. Preparation

If one has prepared his daily work thoroughly and regularly and has reviewed from time to time, an examination should not presage the end of the world, as some students seem to think. Only a few hours of review should be necessary. If a person raises a big hullabaloo over having two examinations on the same day he is admitting that he has neglected his daily work and needs a lot of time for cramming.

B. Questions

Study should not be indiscriminate. Questions are not made to trip up students, but to see whether they have absorbed the important facts and arguments of the course. If you understand the purpose of the course, and pay attention to what the lecturer and author emphasize, you should be able to lay your finger on most of the points on which to place major emphasis in preparation for examinations.

While the "A" student can answer any type of question, it is of some assistance in studying if you have an idea of the form of the examination. A true-false or multiple-choice test naturally covers many more points, so hits seemingly minor details and calls for precise memory. A completion-type test is likely to ask for lists of names, reasons for or against some theory, parts of the body or chemical elements belonging to one group, so note when author or lecturer starts out "There are five. . . ." An essay examination calls for broader recall. One must be able to marshal his facts, organize, and often prove or disprove some theory, or make comparison or draw contrast between two authors or two historical characters.

C. Physical Condition

What would you think of a coach who kept his men playing football or running around the track half the night before an important contest? If one sits up half the night cramming for a test he is in no fit condition to take it. The good student prefers to get plenty of sleep and some outdoor exercise and arrive at the examination in good physical condition. It is especially recommended that the last hour before a test be spent in relaxation, lying down or perhaps taking a walk. If you have a fair grasp of the subject and go into the test fresh and clear-headed, you are halfway through it already. The importance of physical condition increases with the length of the test. For those students who have heard of some stimulant which is supposed to raise their mental acumen or assist flagging memories, let us remark that none has yet been discovered which will improve upon the normal healthy body.

D. Read the Whole Examination Through Before Answering Anything

As soon as the test is handed out, read all the questions. There are two reasons for this suggestion. First, you will avoid including with an early question material which may be more appropriate in a later answer. Second, you will be giving your mind a chance to mull over the later questions while you are writing the earlier. This has been termed putting the subconscious to work. We have all had the experience of vainly trying to recall a person's name or a friend's address, only to have it pop into our mind an hour or a day later. This same mechanism can be used practically in an examination. A question which seems utterly meaningless at the outset will be filled in with quite a bit of information a half hour later. One might as well profit by such functioning of the subconscious.

You may modify this procedure in taking an objective-type test —true-false or multiple-choice. Just check those answers which you are sure of immediately, and attack the rest the second time through.

E. Answer the Exact Question

Make sure you read the questions completely and carefully, including directions which may be printed at the top. Take the word *of one who has read thousands of examinations over a number of* years that countless points are lost by students who jump to hasty conclusions on reading only a part of a question. Your information may be good, but not pertinent to that question. Exact wording is especially crucial in objective-type examinations. Missing a "not" or a plural may be serious.

F. Organize Your Answer

Too often students start to write before thinking out an answer. The instructor is looking for facts and evaluation, not mere bulk. It is far better to think 2 minutes and write 8, than to write all 10 in disorganized fashion. In sciences and social sciences one can usually number his points, which keeps the answer straightforward and shows the teacher that you are orderly in your thinking. On an essay examination a question which covers only half a page may earn full credit, and another filling several pages receive less than half credit. Bad organization and poor expression may have penalty deductions, as well as making your good points harder to find.

G. Plan Your Time

Divide your hour, or whatever time is allowed, into equal parts for the various questions, and try to follow an approximate schedule. If the questions carry different values, plan accordingly. Do equal justice to all questions, so there is no danger of having to skimp or omit some toward the end. The fact that the test is a little long is no excuse, as all students are given the same task.

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