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ESSAYS IN EXPERIMENTAL LOGIC

By
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PREFATORY NOTE

In 1903 a volume was published by the University of Chicago Press, entitled *Studies in Logical Theory*, as a part of the "Decennial Publications" of the University. The volume contained contributions by Drs Thompson (now Mrs Woolley), McLennan, Ashley, Gore, Heidel, Stuart, and Moore, in addition to four essays by the present writer who was also general editor of the volume. The edition of the *Studies* being recently exhausted, the Director of the Press suggested that my own essays be reprinted, together with other studies of mine in the same field. The various contributors to the original volume cordially gave assent, and the present volume is the outcome. Chaps II-V, inclusive, represent (with editorial revisions, mostly omissions) the essays taken from the old volume. The first and introductory chapter has been especially written for the volume. The other essays are in part reprinted and in part rewritten, with additions, from various contributions to philosophical periodicals. I should like to point out that the essay on "Some Stages of Logical Thought" antedates the essays taken from the volume of *Studies*, having been published in 1900, the other essays have been written since then. I should also like to point out that the essays in their psychological phases are written from the standpoint of what is now termed a behavioristic psychology, though some of them antedate the use of that term as a descriptive epithet.

J D

COLUMBIA UNIVERSITY

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I

INTRODUCTION

The key to understanding the doctrine of the essays which are herewith reprinted lies in the passages regarding the temporal development of experience. Setting out from a conviction (more current at the time when the essays were written than it now is) that knowledge implies judgment (and hence, thinking) the essays try to show (1) that such terms as "thinking," "reflection," "judgment" denote inquiries or the results of inquiry, and (2) that inquiry occupies an intermediate and mediating place in the development of an experience. If this be granted, it follows at once that a philosophical discussion of the distinctions and relations which figure most largely in logical theories depends upon a proper placing of them in their temporal context, and that in default of such placing we are prone to transfer the traits of the subject-matter of one phase to that of another—with a confusing outcome.

I

1. An intermediary stage for knowledge (that is, for knowledge comprising reflection and having a distinctively intellectual quality) implies a prior stage

of a different kind, a kind variously characterized in the essays as social, affectional, technological, aesthetic, etc. It may most easily be described from a negative point of view: it is a type of experience which cannot be called a knowledge experience without doing violence to the term "knowledge" and to experience. It may contain knowledge resulting from prior inquiries, it may include thinking within itself, but not so that they dominate the situation and give it its peculiar flavor. Positively, anyone recognizes the difference between an experience of quenching thirst where the perception of water is a mere incident, and an experience of water where knowledge of what water is, is the controlling interest, or between the enjoyment of social converse among friends and a study deliberately made of the character of one of the participants, between aesthetic appreciation of a picture and an examination of it by a connoisseur to establish the artist, or by a dealer who has a commercial interest in determining its probable selling value. The distinction between the two types of experience is evident to anyone who will take the trouble to recall what he does most of the time when not engaged in meditation or inquiry.

But since one does not think about knowledge except when he is *thinking*, except, that is, when the intellectual or cognitional interest is dominant, the professional philosopher is only too prone to think of all experiences as if they were of the type he is

specially engaged in, and hence unconsciously or intentionally to project *its* traits into experiences to which they are alien. Unless he takes the simple precaution of holding before his mind contrasting experiences like those just mentioned, he generally forms a habit of supposing that no qualities or things at all are present in experience except as objects of some kind of apprehension or awareness. Overlooking, and afterward denying, that things and qualities are present to most men most of the time as things and qualities in situations of prizing and aversion, of seeking and finding, of converse, enjoyment and suffering, of production and employment, of manipulation and destruction, he thinks of things as either totally absent from experience or else there as objects of "consciousness" or knowing. This habit is a tribute to the *importance* of reflection and of the knowledge which accrues from it. But a discussion of knowledge perverted at the outset by such a misconception is not likely to proceed prosperously

All this is not to deny that some element of reflection or inference may be required in any situation to which the term "experience" is applicable in any way which contrasts with, say, the "experience" of an oyster or a growing bean vine. Men experience illness. What they experience is certainly something very different from an object of apprehension, yet it is quite possible that what makes an illness into a

conscious experience is precisely the intellectual elements which intervene—a certain taking of some things as representative of other things. My thesis about the primary character of non-reflectional experience is not intended to preclude this hypothesis—which appears to me a highly plausible one. But it is indispensable to note that, even in such cases, the intellectual element is set in a context which is non-cognitive and which holds within it in suspense, a vast complex of other qualities and things that in the experience itself are objects of esteem or aversion, of decision, of use, of suffering, of endeavor and revolt, not of knowledge. When, in a subsequent reflective experience, we look back and find these things and qualities (qualia would be a better word or values, if the latter word were not so open to misconstruction), we are only too prone to suppose that they were then what they are now—objects of a cognitive regard, themes of an intellectual gesture. Hence, the erroneous conclusion that things are either just out of experience, or else are (more or less badly) known objects.

In any case the best way to study the character of those cognitional factors which are merely incidental in so many of our experiences is to study them in the type of experience where they are most prominent, where they dominate; where knowing, in short, is the prime concern. Such study will also, by a reflex reference, throw into greater relief the contrasted

characteristic traits of the non-reflectional types of experience. In such contrast the significant traits of the latter are seen to be internal organization: (1) the factors and qualities hang together, there is a great variety of them but they are saturated with a pervasive quality. Being ill with the grippe is an experience which includes an immense diversity of factors, but none the less is the one qualitatively unique experience which it is. Philosophers in their exclusively intellectual preoccupation with analytic knowing are only too much given to overlooking the primary import of the term "thing"—namely, *res*, an affair, an occupation, a "cause", something which is similar to having the grippe, or conducting a political campaign, or getting rid of an overstock of canned tomatoes, or going to school, or paying attention to a young woman:—in short, just what is meant in non-philosophic discourse by "an experience". Noting things only as if they were objects—that is, objects of knowledge—continuity is rendered a mystery, qualitative, pervasive unity is too often regarded as a subjective state injected into an object which does not possess it, as a mental "construct," or else as a trait of being to be attained to only by recourse to some curious organ of knowledge termed intuition. In like fashion, organization is thought of as the achieved outcome of a highly scientific knowledge, or as the result of transcendental rational synthesis, or as a fiction superinduced by association,

upon elements each of which in its own right "is a separate existence" One advantage of an excursion *by one who philosophizes upon knowledge into primary non-reflectional experience* is that the excursion serves to remind him that every empirical situation has its own organization of a direct, non-logical character

(2) Another trait of every *res* is that it has focus and context brilliancy and obscurity, conspicuousness or apparency, and concealment or reserve, with a constant movement of redistribution Movement about an axis persists, but what is in focus constantly changes "Consciousness," in other words, is only a very small and shifting portion of experience. The scope and content of the focused apparency have immediate dynamic connections with portions of experience not at the time obvious The word which I have just written is momentarily focal; around it there shade off into vagueness my typewriter, the desk, the room, the building, the campus, the town, and so on *In* the experience, and in it in such a way as to *qualify* even what is shiningly apparent, are all the physical features of the environment extending out into space no one can say how far, and all the habits and interests extending backward and forward in time, of the organism which uses the typewriter and which notes the written form of the word only as temporary focus in a vast and changing scene. I shall not dwell upon

the import of this fact in its critical bearings upon theories of experience which have been current. I shall only point out that when the word "experience" is employed in the text it means just such an immense and operative world of diverse and interacting elements

It might seem wiser, in view of the fact that the term "experience" is so frequently used by philosophers to denote something very different from such a world, to use an acknowledgedly objective term: to talk about the typewriter, for example. But experience in ordinary usage (as distinct from its technical use in psychology and philosophy) expressly denotes something which a specific term like "typewriter" does *not* designate. namely, the indefinite range of context in which the typewriter is *actually* set, its spatial and temporal environment, including the habitudes, plans, and activities of its operator. And if we are asked why not then use a general objective term like "world," or "environment," the answer is that the word "experience" suggests something indispensable which these terms omit. namely, an actual focusing of the world at one point in a focus of immediate shining apparency. In other words, in its ordinary human usage, the term "experience" was invented and employed previously because of the necessity of having some way to refer peremptorily to what is indicated in only a roundabout and divided way by such terms as "organism" and

"environment," "subject" and "object," "persons" and "things," "mind" and "nature," and so on.¹

II

Had this background of the essays been more explicitly depicted, I do not know whether they would have met with more acceptance, but it is

¹ I am indebted to an unpublished manuscript of Mr S Klyce of Winchester, Massachusetts, for the significance of the fact that our words divide into *terms* (of which more in the sequel) and into names which are not (strictly speaking) terms at all, but which serve to remind us of the vast and vague continuum, select portions of which only are designated by words as *terms*. He calls such words "infinity and zero" words. The word "experience" is a typical instance of an "infinity word." Mr Klyce has brought out very clearly that a direct situation of experience ("situation" as I employ it is another such word) has no need of any word for itself, the thing to which the word would point being so egregiously there on its own behalf. But when communication about it takes place (as it does, not only in converse with others, but when a man attempts a mutual reference of different periods of his own life) a word is needed to remind both parties of this taken-for-granted whole (another infinity term), while confusion arises if explicit attention is not called to the fact that it is a very different sort of word from the definite terms of discourse which denote distinctions and their relations to one another. In the text, attention is called to the fact that the business man wrestling with a difficulty or a scientific man engaged in an inquiry finds his checks and control specifically in the situation in which he is employed, while the theorizer at large leaves out these checks and limits, and so loses his clues. Well, the words "experience," "situation," etc., are used to *remind* the thinker of the need of reversion to precisely something which never can be one of the terms of his reflection but which nevertheless furnishes the existential meaning and status of them all. "Intuition," mysticism, philosophized or sophisticated monism, are all of them aberrant ways of protesting

likely that they would not have met with so many misunderstandings. But the essays, save for slight incidental references, took this background for granted in the allusions to the universe of non-reflectional experience of our doings, sufferings, enjoyments of the world and of one another. It was their purpose to point out that reflection (and, hence,

against the consequences which result from failing to note what is conveyed by words which are not terms. Were I rewriting these essays *in toto* I should try to take advantage of these and other indispensable considerations advanced by Mr Klyce, but as the essays must stand substantially as they were originally written, and as an Introduction to them must, in order to be intelligible, be stated in not incongruous phraseology, I wish simply to ask the reader to bear in mind this radical difference between such words as "experience," "reality," "universe," "situation," and such terms as "typewriter," "me," "consciousness," "existence," when used (as they must be used if they are to be terms) in a differential sense. The term "reality" is particularly treacherous, for the careless tradition of philosophy (a carelessness fostered, I am sure, by failure to make verbally explicit the distinction to which Mr Klyce has called attention) uses "reality" both as a term of indifferent reference, equivalent to everything taken together or referred to *en masse* as over against some discrimination, and also as a discriminative term with a highly eulogistic flavor as *real* money in distinction from counterfeit money. Then, although every inquiry in daily life, whether technological or scientific, asks *whether* a thing is real only in the sense of asking *what* thing is real, philosophy concludes to a wholesale distinction between the real and the unreal, the real and the apparent, and so creates a wholly artificial problem.

If the philosopher, whether idealistic or realistic, who holds that it is self-contradictory to criticize purely intellectualistic conceptions of the world, because the criticism itself goes on intellectualistic terms, so that its validity depends upon intellectual (or cognitive) conditions, will but think of the very brute doings in which a chemist

knowledge having logical properties) arises because of the appearance of incompatible factors within the empirical situation just pointed at: incompatible not in a mere structural or static sense, but in an active and progressive sense. Then opposed responses are

engages to fix the meanings of his terms and to test his theories and conceptions, he will perceive that all intellectual knowing is but a method for conducting an experiment, and that arguments and objections are but stimuli to induce somebody to try a certain experiment—to have recourse, that is, to a non-logical non-intellectual affair. Or again, the argument is an invitation to him to note that at the very time in which he is thinking, his thinking is set in a continuum which is not an object of thought. The importance attached to the word "experience," then, both in the essays and in this Introduction, is to be understood as an invitation to employ thought and discriminative knowledge as a means of plunging into something which no argument and no term can express, or rather as an invitation to note the fact that no plunge is needed, since one's own thinking and explicit knowledge are already constituted by and within something which does not need to be expressed or made explicit. And finally, there is nothing mystical about this, though mysticism doubtless roots in this fact. Its import is only to call notice to the meaning of, say, formulae communicated by a chemist to others as the result of his experiment. All that can be communicated or expressed is that one believes such and such a thing. The communication has scientific instead of merely social significance because the communicated formula is a direction to other chemists to try certain procedures and see what they get. The *direction* is capable of expression, the result of the experiment, the experience, to which the propositions refer and by which they are tested, is not expressible. (Poetry, of course, is a more competent organ of suggesting it than scientific prose.) The word "experience" is, I repeat, a notation of an inexpressible as that which decides the ultimate status of all which is expressed, inexpressible not because it is so remote and transcendent, but because it is so immediately engrossing and matter of course.

provoked which cannot be taken simultaneously in overt action, and which accordingly can be dealt with, whether simultaneously or successively, only after they have been brought into a plan of organized action by means of analytic resolution and synthetic imaginative conspectus, in short, by means of being taken cognizance of. In other words, reflection appears as the dominant trait of a situation when there is something seriously the matter, some trouble, due to active discordance, dissentiency, conflict among the factors of a prior non-intellectual experience; when, in the phraseology of the essays, a situation becomes tensional.¹

Given such a situation, it is obvious that the meaning of the situation as a whole is uncertain. Through calling out two opposed modes of behavior, it presents itself as meaning two incompatible things. The only way out is through careful inspection of the situation,

¹ There are certain points of similarity between this doctrine and that of Holt regarding contradictions and that of Montague regarding "consciousness" as a case of potential energy. But the latter doctrine seems to me to suffer, first, from an isolation of the brain from the organism, which leads to ignoring the active doing, and, secondly, from an isolation of the "moment" of reduction of actual to potential energy. It appears as a curiously isolated and self-sufficient event, instead of as the focus of readjustment in an organized activity at the pivotal point of maximum "tension"—that is, of greatest inhibition in connection with greatest tendency to discharge. And while I think Holt is wholly right in connecting the possibility of error with objectively plural and conflicting forces, I should hardly regard it as linguistically expedient to call counterbalancing forces "contradictory." The counterbalancing forces of

involving resolution into elements, and a going out beyond what is found upon such inspection to be given, to something else to get a leverage for understanding it. That is, we have (*a*) to locate the difficulty, and (*b*) to devise a method of coping with it. Any such way of looking at thinking demands moreover that the difficulty be located *in* the situation in question (very literally in question). Knowing always has a *particular* purpose, and its solution must be a function of its conditions in connection with *additional* ones which are brought to bear. Every reflective knowledge, in other words, has a specific task which is set by a concrete and empirical situation, so that it can perform that task only by detecting and remaining faithful to the conditions in the situation in which the difficulty arises, while its purpose is a reorganization of its factors in order to get unity.

So far, however, there is no accomplished knowledge, but only knowledge coming to be—learning,

the vaulting do not seem to me contradictory in the arch. But if their presence led me to attempt to say "up" and "down" at the same time there would be contradiction. But even admitting that contradictory propositions are merely about forces which are contradictory—heating and cooling—it is still a long way to error. For propositions about such "contradictions" are obviously *true* propositions. It is only when we make that reaction to one factor which is appropriate to dealing with the other that there is error, and thus can happen where there are no contradictory forces at all beyond the fact that the *agent* is pulled two incompatible and opposed ways at the same time.

in the classic Greek conception Thinking gets no farther, as *thinking*, than a statement of elements constituting the difficulty at hand and a statement—a propounding, a proposition—of a method for resolving them In fixing the framework of every reflective situation, this state of affairs also determines the further step which is needed if there is to be knowledge—knowledge in the eulogistic sense, as distinct from opinion, dogma, and guesswork, or from what casually passes current as knowledge Overt action is demanded if the worth or validity of the reflective considerations is to be determined Otherwise, we have, at most, only a hypothesis that the conditions of the difficulty are such and such, and that the way to go at them so as to get over or through them is thus and so This way must be tried in action, it must be applied, physically, in the situation By finding out what then happens, we test our intellectual findings—our logical terms or projected metes and bounds. If the required reorganization is effected, they are confirmed, and reflection (on that topic) ceases, if not, there is frustration, and inquiry continues That all knowledge, as issuing from reflection, is experimental (in the literal physical sense of experimental) is then a constituent proposition of this doctrine

Upon this view, thinking, or knowledge-getting, is far from being the armchair thing it is often supposed to be The reason it is not an armchair thing

is that it is not an event going on exclusively within the cortex or the cortex and vocal organs. It involves the explorations by which relevant data are procured and the physical analyses by which they are refined and made precise, it comprises the readings by which information is got hold of, the words which are experimented with, and the calculations by which the significance of entertained conceptions or hypotheses is elaborated. Hands and feet, apparatus and appliances of all kinds are as much a part of it as changes in the brain. Since these physical operations (including the cerebral events) and equipments are a part of thinking, thinking is mental, not because of a peculiar stuff which enters into it or of peculiar non-natural activities which constitute it, but because of what physical acts and appliances *do*: the distinctive purpose for which they are employed and the distinctive results which they accomplish.

That reflection terminates, through a definitive overt act,¹ in another non-reflectional situation, within which incompatible responses may again in time be aroused, and so another problem in reflection be set, goes without saying. Certain things about this situation, however, do not at the present time speak for themselves and need to be set forth. Let me in the first place call attention to an ambiguity in the term "knowledge." The statement that all

¹ For emphasis I am here exaggerating by condensing into a single decisive act an operation which is continuously going on.

knowledge involves reflection—or, more concretely, that it denotes an inference from evidence—gives offense to many, it seems a departure from fact as well as a wilful limitation of the word “knowledge.” I have in this Introduction endeavored to mitigate the obnoxiousness of the doctrine by referring to “knowledge which is intellectual or logical in character.” Lest this expression be regarded as a futile evasion of a real issue, I shall now be more explicit (1) It may well be admitted that there is a real sense in which knowledge (as distinct from thinking or inquiring with a guess attached) does not come into existence till thinking has terminated in the experimental act which fulfils the specifications set forth in thinking. But what is also true is that the object thus determined is an object of *knowledge* only because of the thinking which has preceded it and to which it sets a happy term. To run against a hard and painful stone is not of itself, I should say, an act of knowing; but if running into a hard and painful thing is an outcome predicted after inspection of data and elaboration of a hypothesis, then the hardness and the painful bruise which define the thing as a stone also constitute it emphatically an object of knowledge. In short, the object of knowledge in the strict sense is its objective, and this objective is not constituted till it is reached. Now this conclusion—as the word denotes—is thinking brought to a close, done with. If the reader does not find this statement

satisfactory, he may, pending further discussion, at least recognize that the doctrine set forth has no difficulty in connecting knowledge with inference, and at the same time admitting that knowledge in the emphatic sense does not exist till inference has ceased. Seen from this point of view, so-called immediate knowledge or simple apprehension or acquaintance-knowledge represents a critical skill, a certainty of response which has accrued in consequence of reflection. A like sureness of footing apart from prior investigations and testings is found in instinct and habit. I do not deny that these may be better than knowing, but I see no reason for complicating an already too confused situation by giving them the name "knowledge" with its usual intellectual implications. From this point of view, the subject-matter of knowledge is precisely that which we do *not* think of, or mentally refer to in any way, being that which is taken as matter of course, but it is nevertheless knowledge in virtue of the inquiry which has led up to it.

(2) Definiteness, depth, and variety of meaning attach to the objects of an experience just in the degree in which they have been previously thought about, even when present in an experience in which they do not evoke inferential procedures at all. Such terms as "meaning," "significance," "value," have a double sense. Sometimes they mean a function. the office of one thing representing another, or pointing to it

as implied; the operation, in short, of serving as sign. In the word "symbol" this meaning is practically exhaustive. But the terms also sometimes mean an inherent quality, a quality intrinsically characterizing the thing experienced and making it worth while. The word "sense," as in the phrase "sense of a thing" (and non-sense) is devoted to this use as definitely as are the words "sign" and "symbol" to the other. In such a pair as "import" and "importance," the first tends to select the reference to another thing while the second names an intrinsic content. In reflection, the extrinsic reference is always primary. The height of the mercury means rain, the color of the flame means sodium, the form of the curve means factors distributed accidentally. In the situation which follows upon reflection, meanings are intrinsic, they have no instrumental or subservient office, because they have no office at all. They are as much qualities of the objects in the situation as are red and black, hard and soft, square and round. And every reflective experience adds new shades of such intrinsic qualifications. In other words, while reflective knowing is instrumental to gaining control in a troubled situation (and thus has a practical or utilitarian force), it is also instrumental to the enrichment of the immediate significance of subsequent experiences. And it may well be that this by-product, this gift of the gods, is incomparably more valuable for living a life than is the primary and

intended result of control, essential as is that control to having a life to live. Words are treacherous in this field, there are no accepted criteria for assigning or measuring their meanings, but if one use the term "consciousness" to denote immediate values of objects, then it is certainly true that "consciousness is a lyric cry even in the midst of business" But it is equally true that if someone else understands by consciousness the function of effective reflection, then consciousness is a business—even in the midst of writing or singing lyrics But the statement remains inadequate until we add that knowing as a business, inquiry and invention as enterprises, as practical acts, become themselves charged with the meaning of what they accomplish as *their* own immediate quality. There exists no disjunction between aesthetic qualities which are final yet idle, and acts which are practical or instrumental The latter have their own delights and sorrows

III

Speaking, then, from the standpoint of temporal order, we find reflection, or thought, occupying an intermediate and reconstructive position It comes between a temporally prior situation (an organized interaction of factors) of active and appreciative experience, wherein some of the factors have become discordant and incompatible, and a later situation, which has been constituted out of the first situation

by means of acting on the findings of reflective inquiry. This final situation therefore has a richness of meaning, as well as a controlled character lacking to its original. By it is fixed the logical validity or intellectual force of the terms and relations distinguished by reflection. Owing to the continuity of experience (the overlapping and recurrence of like problems), these logical fixations become of the greatest assistance to subsequent inquiries; they are its working means. In such further uses, they get further tested, defined, and elaborated, until the vast and refined systems of the technical objects and formulae of the sciences come into existence—a point to which we shall return later.

Owing to circumstances upon which it is unnecessary to dwell, the position thus sketched was not developed primarily upon its own independent account, but rather in the course of a criticism of another type of logic, the idealistic logic found in Lotze. It is obvious that the theory in question has critical bearings. According to it, reflection in its distinctions and processes can be understood only when placed in its intermediate pivotal temporal position—as a process of control, through reorganization, of material allogical in character. It intimates that thinking would not exist, and hence knowledge would not be found, in a world which presented no troubles or where there are no “problems of evil”, and on the other hand that a reflective

method is the only sure way of dealing with these troubles. It intimates that while the results of reflection, because of the continuity of experience, may be of wider scope than the situation which calls out a particular inquiry and invention, reflection itself is always specific in origin and aim, it always has something special to cope with. For troubles are concretely specific. It intimates also that thinking and reflective knowledge are never an end-all, never their own purpose nor justification, but that they pass naturally into a more direct and vital type of experience, whether technological or appreciative or social. This doctrine implies, moreover, that logical theory in its usual sense is essentially a descriptive study, that it is an account of the processes and tools which have actually been found effective in inquiry, comprising in the term "inquiry" both deliberate discovery and deliberate invention.

Since the doctrine was propounded in an intellectual environment where such statements were not commonplaces, where in fact a logic was reigning which challenged these convictions at every point, it is not surprising that it was put forth with a controversial coloring, being directed particularly at the dominant idealistic logic. The point of contact and hence the point of conflict between the logic set forth and the idealistic logic are not far to seek. The logic based on idealism had, as a matter of fact, treated knowledge from the standpoint of an account of

thought—of thought in the sense of conception, judgment, and inferential reasoning. But while it had inherited this view from the older rationalism, it had also learned from Hume, via Kant, that direct sense or perceptual material must be taken into account. Hence it had, in effect, formulated the problem of logic as the problem of the connection of logical thought with sense-material, and had attempted to set forth a metaphysics of reality based upon various ascending stages of the completeness of the rationalization or idealization of given, brute, fragmentary sense material by synthetic activity of thought. While considerations of a much less formal kind were chiefly influential in bringing idealism to its modern vogue, such as the conciliation of a scientific with a religious and moral point of view and the need of rationalizing social and historic institutions so as to explain their cultural effect, yet this logic constituted the *technique* of idealism—its strictly intellectual claim for acceptance.

The point of contact, and hence of conflict, between it and such a doctrine of logic and reflective thought as is set forth above is, I repeat, fairly obvious. Both fix upon thinking as the key to the situation. I still believe (what I believed when I wrote the essays) that under the influence of idealism valuable analyses and formulations of the work of reflective thought, in its relation to securing knowledge of objects, were executed. But—and the but is one of exceptional

gravity—the idealistic logic started from the distinction between immediate plural data unifying, rationalizing meanings as a distinction ready-made in experience, and it set up as the goal of knowledge (and hence as the definition of true reality) a complete, exhaustive, comprehensive, and eternal system in which plural and immediate data are forever woven into a fabric and pattern of self-luminous meaning. In short, it ignored the temporally intermediate and instrumental place of reflection, and because it ignored and demed this place, it overlooked its essential feature—control of the environment in behalf of human progress and well-being, the effort at control being stimulated by the needs, the defects, the troubles, which accrue when the environment coerces and suppresses man or when man endeavors in ignorance to override the environment. Hence it misconstrued the criterion of the work of intelligence, it set up as its criterion an Absolute and Non-temporal reality at large, instead of using the criterion of specific temporal achievement of consequences through a control supplied by reflection. And with this outcome, it proved faithless to the cause which had generated it and given it its reason for being—the magnification of the work of intelligence in our actual physical and social world. For a theory which ends by declaring that everything is, really and eternally, thoroughly ideal and rational, cuts the nerve of the specific demand and work of intelligence.

From this general statement, let me descend to the technical point upon which turns the criticism of idealistic logic by the essays Grant, for a moment, as a hypothesis, that thinking starts neither from an implicit force of rationality desiring to realize itself completely in and through and against the limitations which are imposed upon it by the conditions of our human experience (as all idealisms have taught), nor from the fact that in each human being is a "mind" whose business it is just to "know"—to theorize in the Aristotelian sense, but, rather, that it starts from an effort to get out of some trouble, actual or menacing. It is quite clear that the human race has tried many another way out besides reflective inquiry. Its favorite resort has been a combination of magic and poetry, the former to get the needed relief and control; the latter to import into imagination, and hence into emotional consummation, the realizations denied in fact. But as far as reflection does emerge and gets a working foothold, the nature of its job is set for it. On the one hand, it must discover, it must find out, it must detect, it must inventory what is there. All this, or else it will never know what the matter is, the human being will not find out what "struck him," and hence will have no idea of where to seek for a remedy—for the needed control. On the other hand, it must invent, it must project, it must bring to bear upon the given situation what is not, as it exists, given as a part of it.

This seems to be quite empirical and quite evident. The essays submitted the thesis that this simple dichotomization of the practical situation of power and enjoyment, when menaced, into what is there (whether as obstacle or as resource), and into suggested inventions—projections of something else to be brought to bear upon it, ways of dealing with it—is the explanation of the time-honored logical determinations of brute fact, datum and meaning or ideal quality, of (in more psychological terminology) sense-perception and conception, of particulars (parts, fragments) and universals-generics, and also of whatever there is of intrinsic significance in the traditional subject-predicate scheme of logic. It held, less formally, that this view explained the eulogistic connotations always attaching to “reason” and to the work of reason in effecting unity, harmony, comprehension, or synthesis, and to the traditional combination of a depreciatory attitude toward brute facts with a grudging concession of the necessity which thought is under of accepting them and taking them for its own subject-matter and checks. More specifically, it is held that this view supplied (and I should venture to say for the first time) an explanation of the traditional theory of truth as a correspondence or agreement of existence and mind or thought. It showed that the correspondence or agreement was like that between an invention and the conditions which the invention is intended to

meet. Thereby a lot of epistemological hangers-on to logic were eliminated, for the distinctions which epistemology had misunderstood were located where they belong.—in the art of inquiry, considered as a joint process of ascertainment and invention, projection, or “hypothesizing”—of which more below

IV

The essays were published in 1903. At that time (as has been noted) idealism was in practical command of the philosophic field in both England and this country, the logics in vogue were profoundly influenced by Kantian and post-Kantian thought. Empirical logics, those conceived under the influence of Mill, still existed, but their light was dimmed by the radiance of the regnant idealism. Moreover, from the standpoint of the doctrine expounded in the essays, the empirical logic committed the same logical fault as did the idealistic, in taking sense-data to be primitive (instead of being resolutions of the *things* of prior experiences into elements for the aim of securing evidence), while it had no recognition of the specific service rendered by intelligence in the development of new meanings and plans of new actions. This state of things may explain the controversial nature of the essays, and their selection in particular of an idealistic logic for animadversion.

Since the essays were written, there has been an impressive revival of realism, and also a development

of a type of logical theory—the so-called Analytic Logic—corresponding to the philosophical aspirations of the new realism. This marked alteration of intellectual environment subjects the doctrine of the essays to a test not contemplated when they were written. It is one thing to develop a hypothesis in view of a particular situation, it is another to test its worth in view of procedures and results having a radically different motivation and direction. It is, of course, impossible to discuss the analytic logic in this place. A consideration of how some of its main tenets compare with the conclusions outlined above will, however, throw some light upon the meaning and the worth of the latter. Although this was formulated with the idealistic and sensationalistic logics in mind, the hypothesis that knowledge can be rightly understood only in connection with considerations of time and temporal position is a general one. If it is valid, it should be readily applicable to a critical placing of any theory which ignores and denies such temporal considerations. And while I have learned much from the realistic movement about the full force of the position sketched in the essays when adequately developed, and while later discussions have made it clear that the language employed in the essays was sometimes unnecessarily (though naturally) infected by the subjectivism of the positions against which it was directed, I find that the analytic logic is also guilty of the fault of temporal dislocation.

In one respect, idealistic logic takes cognizance of a temporal contrast, indeed, it may fairly be said to be based upon it. It seizes upon the contrast in intellectual force, consistency, and comprehensive-ness between the crude or raw data with which science sets out and the defined, ordered, and systematic totality at which it aims—and which in part it achieves. This difference is a genuine empirical difference. Idealism noted that the difference may properly be ascribed to the intervention of thinking—that thought is what makes the difference. Now since the outcome of science is of higher intellectual rank than its data, and since the intellectualistic tradition in philosophy has always identified degrees of logical adequacy with degrees of reality, the conclusion was naturally drawn that *the* real world—absolute reality—was an ideal or thought-world, and that the sense-world, the commonsense-world, the world of actual and historic experience, is simply a phenomenal world presenting a fragmentary manifestation of that thought which the process of human thinking makes progressively explicit and articulate.

This perception of the intellectual superiority of objects which are constituted at the conclusion of thinking over those which formed its data may fairly be termed the empirical factor in the idealistic logic. The essence of the realistic reaction, on its logical side, is exceedingly simple. It starts from those objects with which science, approved science, ends. Since

they are the objects which are *known*, which are true, they are the real objects. That they are also objects for *intervening* thinking is an interesting enough historical and psychological fact, but one quite irrelevant to their natures, which are precisely what knowledge finds them to be. In the biography of human beings it may hold good that apprehension of objects is arrived at only through certain wanderings, endeavors, exercises, experiments, possibly acts called sensation, memory, reflection may be needed by men in reaching a grasp of the objects. But such things denote facts about the history of the knower, not about the nature of the known object. Analysis will show, moreover, that any intelligible account of this history, any verified statement of the psychology of knowing assumes objects which are unaffected by the knowing—otherwise the pretended history is merely pretense and not to be trusted. The history of the process of knowing, moreover, implies also the terms and propositions—truths—of logic. That logic must therefore be assumed as a science of objects real and true, quite apart from any process of thinking them. In short, the requirement is that we shall think things as they are themselves, not make them into objects constructed by thinking.

This revival of realism coincided also with an important movement in mathematics and logic. the attempt to treat logical distinctions by mathematical methods, while at the same time mathe-

mathematical subject-matter had become so generalized that it was a theory of types and orders of terms and propositions—in short, a logic. Certain minds have always found mathematics the type of knowledge, because of its definiteness, order, and comprehensiveness. The wonderful accomplishments of modern mathematics, including its development into a type of highly generalized logic, was not calculated to lessen the tendency. And while prior philosophers have generally played their admiration of mathematics into the hands of idealism (regarding mathematical subject-matter as the embodiment or manifestation of pure thought), the new philosophy insisted that the terms and types of order constituting mathematical and logical subject-matter were real in their own right, and (at most) merely led up to and discovered by thinking—an operation, moreover, itself subjected (as has been pointed out) to the entities and relationships set forth by logic.

The inadequacy of this summary account may be pardoned in view of the fact that no adequate exposition is intended, all that is wanted is such a statement of the general relationship of idealism to realism as may serve as the point of departure for a comparison with the instrumentalism of the essays. In bare outline, it is obvious that the two latter agree in regarding thinking as instrumental, not as constitutive. But this agreement turns out to be a formal matter in contrast with a disagreement

concerning that *to which* thinking is instrumental. The new realism finds that it is instrumental simply to knowledge of objects. From this it infers (with perfect correctness and inevitableness) that thinking (including all the operations of discovery and testing as they might be set forth in an inductive logic) is a mere psychological preliminary, utterly irrelevant to any conclusions regarding the nature of objects known. The thesis of the essays is that thinking is instrumental to a control of the environment, a control effected through acts which would not be undertaken without the prior resolution of a complex situation into assured elements and an accompanying projection of possibilities—without, that is to say, thinking.

Such an instrumentalism seems to analytic realism but a variant of idealism. For it asserts that processes of reflective inquiry play a part in shaping the objects—namely, terms and propositions—which constitute the bodies of scientific knowledge. Now it must not only be admitted but proclaimed that the doctrine of the essays holds that intelligence is not an otiose affair, nor yet a mere preliminary to a spectator-like apprehension of terms and propositions. In so far as it is idealistic to hold that objects of knowledge *in their capacity of distinctive objects of knowledge* are determined by intelligence, it is idealistic. It believes that faith in the constructive, the creative, competency of intelligence was the redeeming

element in historic idealisms. Lest, however, we be misled by general terms, the scope and limits of this "idealism" must be formulated.

(1) Its distinguishing trait is that it defines thought or intelligence by function, by work done, by consequences effected. It does not start with a power, an entity or substance or activity which is ready-made thought or reason and which as such constitutes the world. Thought, intelligence, is to it just a name for the events and acts which make up the processes of analytic inspection and projected invention and testing which have been described. These events, these acts, are wholly natural, they are "realistic"; they comprise the sticks and stones, the bread and butter, the trees and horses, the eyes and ears, the lovers and haters, the sighs and delights of ordinary experience. Thinking is what some of the actual existences *do*. *They* are in no sense constituted by thinking, on the contrary, the problems of thought are set by *their* difficulties and its resources are furnished by *their* efficacies, its acts are *their* doings adapted to a distinctive end.

(2) The reorganization, the modification, effected by thinking is, by this hypothesis, a physical one. Thinking ends in experiment and experiment is an *actual* alteration of a physically antecedent situation in those details or respects which called for thought in order to do away with some evil. To suffer a disease and to try to do something for it is a primal

experience, to look into the disease, to try and find out just what makes it a disease, to invent—or hypothecate—remedies is a reflective experience, to try the suggested remedy and see whether the disease is helped is the act which transforms the data and the intended remedy into *knowledge objects*. And this transformation into knowledge objects is also effected by changing physical things by physical means

Speaking from this point of view, the decisive consideration as between instrumentalism and analytic realism is whether the operation of experimentation is or is not necessary to knowledge. The instrumental theory holds that it is, analytic realism holds that even though it were essential in *getting* knowledge (or in learning), it has nothing to do with knowledge itself, and hence nothing to do with the known object that it makes a change only in the knower, not in what is to be known. And for precisely the same reason, instrumentalism holds that an object as a knowledge-object is never a whole; that it is surrounded with and inclosed by things which are quite other than objects of knowledge, so that knowledge cannot be understood in isolation or when taken as mere beholding or grasping of objects. That is to say, while it is making the sick man better or worse (or leaving him just the same) which determines the knowledge-value of certain findings of fact and certain conceptions as to mode of treatment

(so that by the treatment they become definitely knowledge-objects), yet improvement or deterioration of the patient is other than an object of cognitive apprehension. Its knowledge-object phase is a selection in reference to prior reflections. So the laboratory experiment of a chemist which brings to a head a long reflective inquiry and settles the intellectual status of its findings and theorizings (thereby making them into cognitive concerns or terms and propositions) is itself much more than a knowledge of terms and propositions, and only by virtue of this surplusage is it even contemplative knowledge. He knows, say, tin, when he has made tin into an outcome of his investigating procedures, but tin is much more than a term of knowledge.

Putting the matter in a slightly different way, logical (as distinct from naïve) realism confuses means of knowledge with objects of knowledge. The means are twofold: they are (a) the data of a particular inquiry so far as they are significant because of prior experimental inquiries, and (b) they are the meanings which have been settled in consequence of prior intellectual undertakings. On the one hand, particular things or qualities as signs; on the other, general meanings as possibilities of what is signified by given data. Our physician has in advance a technique for telling that certain particular traits, if he finds them, are symptoms, signs; and he has a store of diseases and remedies in mind which may possibly be meant

in any given case From prior reflective experiments he has learned to look for temperature, for rate of heartbeats, for sore spots in certain places; to take specimens of blood, sputum, of membrane, and subject them to cultures, microscopic examination, etc. He has acquired certain habits, in other words, in virtue of which certain physical qualities and events are more than physical, in virtue of which they are signs or indications of something else

On the other hand, this something else is a somewhat not physically present at the time: it is a series of events still to happen. It is suggested by what is given, but is no part of the given. Now, in the degree in which the physician comes to the examination of what is there with a large and comprehensive stock of such possibilities or meanings in mind, he will be intellectually resourceful in dealing with a particular case. They (the concepts or universals of the situation) are (together with the sign-capacity of the data) the *means* of knowing the case in hand, they are the agencies of transforming it, through the actions which they call for, into an object—an object of knowledge, a truth to be stated in propositions. But since the professional (as distinct from the human) knower is particularly concerned with the elaboration of these tools, the professional knower—of which the class philosopher presents of course one case—ungenerously drops from sight the situation in its integrity and treats these instrumentalities of knowledge as

objects of knowledge. Each of these aspects—signs and things signified—is sufficiently important to deserve a section on its own account

V

The position taken in the essays is frankly realistic in acknowledging that certain brute existences, detected or laid bare by thinking but in no way constituted out of thought or any mental process, set every problem for reflection and hence serve to test its otherwise merely speculative results. It is simply insisted that as a matter of fact these brute existences are equivalent neither to the objective content of the situations, technological or artistic or social, in which thinking originates, nor to the things to be known—of the objects of knowledge. Let us take the sequence of mineral rock in place, pig iron and the manufactured article, comparing the raw material in its undisturbed place in nature to the original *res* of experience, compare the manufactured article to the objective and object of knowledge, and the brute datum to the metal undergoing extraction from raw ore for the sake of being wrought into a useful thing. And we should add that just as the manufacturer always has a lot of already extracted ore on hand for use in machine processes as it is wanted, so every person of any maturity, especially if he lives in an environment affected by previous scientific work, has a lot of extracted data—or, what comes to the same thing, of

ready-made tools of extraction—for use in inference as they are required. We go about with a disposition to identify certain shapes as tables, certain sounds as words of the French language, certain cries as evidences of distress, certain massed colors as woods in the distance, certain empty spaces as buttonholes, and so on indefinitely. The examples are trivial enough. But if more complicated matters were taken, it would be seen that a large part of the technique of science (all of science which is specifically “inductive” in character) consists of methods of finding out just what qualities are unambiguous, economical, and dependable signs of those other things which cannot be got at as directly as can the sign-bearing elements. And if we started from the more obscure and complex difficulties of identification and diagnosis with which the sciences of physiology, botany, astronomy, chemistry, etc., deal, we should be forced to recognize that the identifications of everyday life—our “perceptions” of chairs, tables, trees, friends—differ only in presenting questions much easier of solution.

In every case, it is a matter of fixing some given physical existence as a sign of some other existences not given in the same way as is that which serves as a sign. These words of Mill might well be made the motto of every logic. “To draw inferences has been said to be the great business of life. Everyone has daily, hourly, and momentary need of ascertaining facts which he has not directly observed It

is the only occupation in which the mind never ceases to be engaged" Such being the case, the indispensable condition of doing the business well is the careful determination of the sign-force of specific things in experience. And this condition can never be fulfilled as long as a thing is presented to us, so to say, in bulk. The complex organizations which are the subject-matter of our direct activities and enjoyments are grossly unfit to serve as intellectual indications or evidence. Their testimony is almost worthless, they speak so many languages. In their complexity, they point equally in all directions; in their unity, they run in a groove and point to whatever is most customary. To break up the complexity, to resolve it into a number of independent variables each as irreducible as it is possible to make it, is the only way of getting secure pointers as to what is indicated by the occurrence of the situation in question. The "objects" of ordinary life, stones, plants, cats, rocks, moon, etc., are neither the data of science nor the objects at which science arrives.

We are here face to face with a crucial point in analytic realism. Realism argues that we have no alternative except either to regard analysis as falsifying (*à la* Bergson), and thus commit ourselves to distrust of science as an organ of knowledge, or else to admit that something eulogistically termed Reality (especially as *Existence*, Being as subject to space and time determinations) is but a complex made up of

fixed, mutually independent simples viz, that Reality is truly conceived only under the caption of whole and parts, where the parts are independent of each other and consequently of the whole. For instrumentalism, however, the alleged dilemma simply does not exist. The results of abstraction and analysis are perfectly real, but they are real, like everything else, *where* they are real—that is to say, in some *particular* coexistence in the situation where they originate and operate.

The remark is perhaps more cryptic than enlightening. Its intent is that reflection is an actual occurrence as much so as a thunderstorm or a growing plant, and as an actual existence it is characterized by specific existential traits uniquely belonging to it—the entities of simple data as such. It is in control of the evidential function that irreducible and independent simples or elements exist. They certainly are found there, as we have seen they *are* “common-sense” objects broken up into expeditious and unambiguous signs of conclusions to be drawn, conclusions about other things with which they—the elements—are continuous in some respects, although discrete¹ with respect to their sensory conditions. But there is no more reason for supposing that they exist *elsewhere* in the same manner than there is for supposing that

¹ I would remark in passing that a recognition that a thing may be continuous in one respect and discrete in another would obviate a good many difficulties.

centaurs coexist along with domestic horses and cows because they coexist with the material of folk-tales or rites, or for supposing that pigs of iron pre-existed as pigs in the mine. There is no falsifying in analysis *because* the analysis is carried on within a situation which controls it. The fallacy and falsifying is on the part of the philosopher who ignores the contextual situation and who transfers the properties which things have as dependable evidential signs over to things in other modes of behavior.

It is no reply to this position to say that the "elements" or simples were there prior to inquiry and to analysis and abstraction. Of course their subject-matter was in some sense "there"; and, being there, was found, discovered, or detected—hit upon. I am not questioning this statement, rather, I have been asserting it. But I am asking for patience and industry to consider the matter somewhat further. I would ask the man who takes the terms of logical analysis (physical resolution for the sake of getting assured evidential indications of objects as yet unknown) to be things which coexist with the things of a non-inferential situation, to inquire *in what way* his independent given ultimates were there prior to analysis. I would point out that in any case they did *not* pre-exist *as* signs. (a) Consequently, whatever traits or properties they possess as signs must at least be referred exclusively to the reflective situation. And they must possess some distinguishing traits *as* signs;

otherwise they would be indistinguishable from anything else which happens to be thought of, and could not be employed as evidence could not be, in short, what they are. If the reader will seriously ask just what traits data do possess as signs, or evidence, I shall be quite content to leave the issue to the results of his own inquiries. (b) Any inquiry as to *how* the data antecedently exist will, I am confident, show that they do not exist in the same purity, the same external exclusiveness and internal homogeneity, which they present within the situation of inference, any more than the iron which pre-existed in the rocks in the mountains was just the same as the fluxed and extracted ore. Hence they did not exist in the same isolated simplicity. I have not the slightest interest in exaggerating the scope of this difference. The important matter is not its extent or range, but what such a change—however small—indicates. namely, that the material is entering into a new environment, and has been subjected to the changes which will make it useful and effective in that environment. It is trivial to suppose that the sole or even the primary difficulty which an analytic realism has to face is the occurrence of error and illusions, of "secondary" qualities, etc. The difficulty resides in the contrast of the world of a naïve, say Aristotelian, realism with that of a highly intellectualized and analytic disintegration of the everyday world of things. If realism is generous enough to have a place *within* its

world (as a *res* having social and temporal qualities as well as spatial ones) for data in process of construction of *new* objects, the outlook is radically different from the case where, in the interests of a theory, a realism insists that analytic determinations are the sole real things ¹

If it be not only conceded but asserted that the subject-matter generating the data of scientific procedure antedates the procedure, it may be asked what is the point of insisting so much upon the fact that data exist only within the procedure? Is not the statement either a trivial tautology or else an attempt to inject, *sub rosa*, a certain idealistic dependence upon thought into even brute facts? The question is a fair one. And the clew to the reply may be found in the consideration that it was not historically an easy matter to reduce the iron of the rocks to the iron which could freely and effectively be used in the manufacture of articles. It involved hitting upon a highly complicated art, but an art, nevertheless, which anyone with the necessary capital and education can command today as a matter of course, giving no thought to the fact that one is using an art constructed originally with vast pains. Similarly it is by art, by a carefully determined technique, that the things of our primary experience are resolved into unquestioned and irreducible data, lacking in

¹ In effect, the fallacy is the same as that of an idealistic theory which holds that all objects are "really" associations of sensations

inner complexity and hence unambiguous. There is no call for the scientific man in the pursuit of his calling to take account of this fact, any more than the manufacturer need reckon with the arts which are required to deliver him his material. But a logician, a philosopher, is supposed to take a somewhat broader survey, and for his purposes the fact which the scientific inquirer can leave out of account, because it is no part of his business, may be the important fact. For the logician, it would seem, is concerned not with the significance of these or those data, but with the significance of there being such things as data, with their traits of irreducibleness, bruteness, simplicity, etc. Now, as the special scientific inquirer answers the question as to the significance of his special brute facts by discovering other facts with which they are connected, so it would seem that the logician can find out the significance of the existence of data (the fact which concerns him) only by finding out the other facts with which *they* coexist—their significance being their factual continuities. And the first step in the search for these other facts which supply significance is the recognition that they have been extracted for a purpose—for the purpose of guiding inference. It is this purposeful situation of inquiry which supplies the *other* facts which give the existence of brute data their significance. And unless there is such a discovery (or some better one), the logician will inevitably fail in conceiving the import

of the existence of brute data. And this misconception is, I repeat, just the defect from which an analytic presentative realism suffers. To perceive that the brute data laid bare in scientific proceedings are always traits of an extensive situation, and of that situation as one which needs control and which is to undergo modification in some respects, is to be protected from any temptation to turn logical specification into metaphysical atomism. The need for the protection is sufficiently great to justify spending some energy in pointing out that the brute objective facts of scientific discovery are discovered facts, discovered by physical manipulations which detach them from their ordinary setting.

We have stated that, strictly speaking, data (as the immediate considerations from which controlled inference proceeds) are not objects but means, instrumentalities, of knowledge—things by which we know rather than things known. It is by the color stain that we know a cellular structure, it is by marks on a page that we know what some man believes, it is by the height of the barometer that we know the probability of rain, it is by the scratches on the rock that we know that ice was once there, it is by qualities detected in chemical and microscopic examination that we know that a thing is human blood and not paint. Just what the realist asserts about so-called mental states of sensations, images, and ideas, namely, that they are not the subject-matter of

knowledge but its agencies, holds of the chairs and tables to which he appeals in support of his doctrine of an immediate cognitive presentation, apart from any problem and any reflection. And there is very solid ground for instituting the comparison: the sensations, images, etc., of the idealist are nothing but the chairs, tables, etc., of the realist in their ultimate irreducible qualities.¹ The problem in which the realist appeals to the immediate apprehension of the table is the epistemological problem, and he appeals to the table not as an object of knowledge (as he thinks he does), but as evidence, as a means of knowing his conclusion—his real *object* of knowledge. He has only to examine his own evidence to see that it is evidence, and hence a term in a reflective inquiry, while the nature of knowledge is the *object* of his knowledge.

Again, the question may be asked: Since instrumentalism admits that the table is really "there," why make such a fuss about whether it is there as a means or as an object of knowledge? Is not the distinction mere hair-splitting unless it is a way of smuggling in a quasi-idealistic dependence upon thought? The reply will, I hope, clinch the significance of the distinction, whether or no it makes

¹ This statement is meant literally. The "sensations" of color, sound, etc., to which appeal is made in a scientific inquiry are nothing mental in structure or stuff, they are actual, extra-organic things analyzed down to what is so indubitably there that it may safely be taken as a basis of inference.

it acceptable. Respect for knowledge and its object is the ground for insisting upon the distinction. The object of knowledge is, so to speak, a more dignified, a more complete, sufficient, and self-sufficing thing than any datum can be. To transfer the traits of the object as known to the datum of reaching it, is a material, not a merely verbal, affair. It is precisely this shift which leads the presentative realist to substitute for irreducibility and unambiguity of logical function (use in inference) physical and metaphysical isolation and elementariness. It is this shift which generates the need of reconciling the deliverances of science with the structure and qualities of the world in which we directly live, since it sets up a rivalry between the claims of the data, of common-sense objects, and of scientific objects (the results of adequate inquiry). Above all it commits us to a view that change is in some sense unreal, since ultimate and primary entities, being simple, do not permit of change. No, whatever is to be said about the validity of the distinction contended for, it cannot be said to be insignificant. A theory which commits us to the conception of a world of Eleatic fixities as primary and which regards alteration and organization as secondary has such profound consequences for thought and conduct that a detection of its motivating fallacy makes a substantial difference. No more fundamental question can be raised than the range and force of the applicability to nature,

life, and society of the whole-and-part conception. And if we confuse our premises by taking the existential instrumentalities of knowledge for its real objects, all distinctions and relations in nature, life, and society are thereby requisitioned to be really only cases of the whole-and-part nature of things.

VI

| The instrumental theory acknowledges the objectivity of *meanings* as well as of data. They are referred to and employed in reflective inquiry with the confidence attached to the hard facts of sense. Pragmatic, as distinct from sensational, empiricism may claim to have antedated neo-realism in criticism of resolution of meanings into states or acts of consciousness. As previously noted, meanings are indispensable instrumentalities of reflection, strictly coincident with and correlative to what is analytically detected to be given, or irremovably there. Data in their fragmentary character pose a problem, they also define it. They suggest possible meanings. Whether they *indicate* them as well as suggest them is a question to be resolved. But the meanings suggested are genuinely and existentially suggested, and the problem described by the data cannot be solved without their acknowledgment and use. That this instrumental necessity has led to a metaphysical hypostatizing of meanings into essences or subsistences having some sort of mysterious being

apart from qualitative things and changes is a source of regret, it is hardly an occasion for surprise.

To be sure of our footing, let us return to empirical ground. It is as certain an empirical fact that one thing suggests another as that fire alters the thing burned. The suggesting thing has to be there or given, something has to be there to do the suggesting. The suggested thing is obviously not "there" in the same way as that which suggests, if it were, it would not have to be suggested. A suggestion tends, in the natural man, to excite action, to operate as a stimulus. I may respond more readily and energetically to a suggested fire than to the thing from which the suggestion sprang—that is, the thing by itself may leave me cold, the thing as suggesting something else may move me vigorously. The response if effected has all the force of a belief or conviction. It is *as if* we believed, on intellectual grounds, that the thing *is* a fire. But it is discovered that not all suggestions are indications, or signifiers. The whale suggested by the cloud form does not stand on the same level as the fire suggested by smoke, and the suggested fire does not always turn out fire in fact. We are led to examine the original point of departure and we find out that it was not really smoke. In a world where skim-milk and cream suggestions, acted upon, have respectively different consequences, and where a thing suggests one as readily as the other (or skim-milk masquerades as cream), the importance of

examination of the thing exercising the suggestive force prior to acting upon what it suggests is obvious. Hence the act of response naturally stimulated is turned into channels of inspection and experimental (physical) analysis. We move our body to get a better hold on it, and we pick it to pieces to see what it is

This is the operation which we have been discussing in the last section. But experience also testifies that the thing suggested is worth attention on its own account. Perhaps we cannot get very readily at the thing which, suggesting flame, suggests fire. It may be that reflection upon the meaning (or conception), "fire," will help us. Fire—here, there, or anywhere, the "essence" fire—means thus and so, if this thing really means fire, it will have certain traits, certain attributes. Are they there? There are "flames" on the stage as part of the scenery. Do they really indicate fire? Fire would mean danger, but it is not possible that such a risk would be taken with an audience (other meanings, risk, audience, danger, being brought in). It must be something else. Well, it is probably colored tissue-paper in strips rapidly blown about. This meaning leads us to closer inspection, it directs our observations to hunt for corroborations or negations. If conditions permitted, it would lead us to walk up and get at the thing in close quarters. In short, devotion to a suggestion, prior to accepting it as

stimulus, leads first to other suggestions which may be more applicable; and, secondly, it affords the standpoint and the procedure of a physical experimentation to detect those elements which are the more reliable signs, indicators (evidence). *Suggestions thus treated are precisely what constitute meanings, subsistences, essences, etc* Without such development and handling of what is suggested, the process of analyzing the situation to get at its hard facts, and especially to get at just those which have a right to determine inference, is haphazard—ineffectively done. In the actual stress of any such needed determination it is of the greatest importance to have a large stock of possible meanings to draw on, and to have them ordered in such a way that we can develop each promptly and accurately, and move quickly from one to another. It is not to be wondered at then that we not only conserve such suggestions as have been previously converted successfully into meanings, but also that we (or some men at least) turn professional inquirers and thinkers; that meanings are elaborated and ordered in related systems quite apart from any immediately urgent situation; or that a realm of “essences” is built up apart from that of existences.

That suggestion occurs is doubtless a mystery, but so is it a mystery that hydrogen and oxygen make water. It is one of the hard, brute facts that we have to take account of. We can investigate the conditions under which the happening takes place,

we can trace the consequences which flow from the happening. By these means we can so control the happening that it will take place in a more secure and fruitful manner. But all this depends upon the hearty acceptance of the happening as fact. Suggestion does not of itself yield meanings, it yields only suggested things. But the moment we take a suggested thing and develop it in connection with other meanings and employ it as a guide of investigation (a method of inquiry), that moment we have a full-fledged meaning on our hands, possessing all the verifiable features which have been imported at any time to ideas, forms, species, essences, subsistences. This empirical identification of meaning by means of the specific fact of suggestion cuts deep—if Occam's razor still cuts.

A suggestion lies between adequate stimulation and logical indication. A cry of fire may start us running without reflection, we may have learned, as children are taught in school, to react without questioning. There is overt stimulation, but no suggesting. But if the response is held off or postponed, it may persist as suggestion. The cry suggests fire and suggests the advisability of flight. We may, in a sense we must, call suggestion "mental." But it is important to note what is meant by this term. Fire, running, getting burned, are not mental, they are physical. But in their status of being suggested they may be called mental when we recognize this

distinctive status. This means no more than that they are implicated in a specific way in a reflective situation, in virtue of which they are susceptible of certain modes of treatment. Their status as suggested by certain features of the actual situation (and possibly meant or indicated as well as suggested) may be definitely fixed, then we get meanings, logical terms—determinations ¹

Words are of course the agencies of fixation chiefly employed, though any kind of physical existence—a gesture, a muscular contraction in the finger or leg or chest—under ready command may be used. What is essential is that there be a specific physical existence at hand which may be used to concrete and hold on to the suggestion, so that the latter may be handled on its own account. Until thus detached and refixed there are things suggested, but hardly a suggestion; things meant, but hardly a meaning, things ideated, but hardly an idea. And the suggested thing until detached is still too literal, too tied up with other things, to be further developed or to be successfully used as a method of experimentation in new directions so as to bring to light new traits.

¹ A term is not of course a mere word, a mere word is non-sense, for a sound by itself is not a word at all. Nor is it a mere meaning, which is not even natural non-sense, being (if it be at all) supernatural or transcendental nonsense. "Terms" signify that certain absent existences are indicated by certain given existences, in the respect that they are abstracted and fixed for intellectual use by some physically convenient means, such as a sound or a muscular contraction of the vocal organs.

As data are signs which *indicate* other existences, so meanings are signs which *imply* other meanings.¹ I am doubtful, for example, whether *this* is a man or not, that is, I am doubtful as to some given traits when they are taken as signs or evidences, but I am inclined to the hypothesis of a man. Having such a tentative or conceptual object in mind, I am enabled to explore economically and effectively, instead of at random, what is present, *provided* I can elaborate the implications of the term "man." To develop its implications is all one with telling its meaning in connection with other meanings. Being a man means, for example, speaking when spoken to—another meaning which need have been no part of "man" as originally suggested. This meaning of "answering questions" will then suggest a procedure which the term "man" in its first meaning did not possess; it is an implication or implied meaning which puts me in a new and possibly more fruitful relation to the thing. (The process of developing implications is usually termed "discourse" or ratiocination.) Now, be it noted, replying to questions is no part of the *definition* of man; it would not be now an implication of Plato or of the Russian Czar for me. In other words, there is something in the actual situation which suggests *inquiring* as well as *man*, and it is the interaction between these

¹ This distinction of indication as existential and implication as conceptual or essential, I owe to Mr. Alfred Sidgwick. See his *Fallacies*, p. 50.

two suggestions which is fruitful. There is consequently no mystery about the fruitfulness of deduction—though this fruitfulness has been urged as though it offered an insuperable objection to instrumentalism. On the contrary, instrumentalism is the only theory to which deduction is not a mystery. If a variety of wheels and cams and rods which have been invented with reference to doing a given task are put together, one expects from the assembled parts a result which could not have been got from any one of them separately or from all of them together in a heap. Because they are independent and unlike structures, working on one another, something new happens. The same is true of terms in relation to one another. When these are brought to bear upon one another, something new, something quite unexpected happens, quite as when one tries an acid with which he is not familiar upon a rock with which he is unfamiliar—that is, unfamiliar in such a conjunction, in spite of intimate acquaintance elsewhere. A definition may fix a certain modicum of meaning in the abstract, as we say, it is a specification of a minimum which gives the point of departure in every interaction of a term with other terms. But nothing follows from the definition by itself or in isolation. It is explicit (boreingly so) and has no implications. But bring it in connection with another term with which it has not previously interacted and it may behave in the most delightful or in the most

disgustingly disappointing way The necessity for independent terms is made obvious in the modern theory of axioms It escapes attention in much of the contemporary logic of transitive and non-transitive, symmetrical and non-symmetrical relations, because the terms are so loaded that there are no propositions at all, but only discriminations of orders of terms The terms which figure in the discussions, in other words, are correlatives—"brother," "parent," "up," "to the right of," "like," "greater," "after" Such terms are not logical terms, they are *halves* of such terms as "brother-other-offspring-of-the-same-parents", "parent-child", "up-down", "right-left", "thing-similar-to-another-thing", "greater-less", "after-before" They express positions in a *determined* situation, they are *relatives*, not relations They lack implications, being explicit But a man who is a brother and also a rival in love, and a poorer man than his rival brother, expresses an interaction of different terms from which something might happen terms with implications, terms constituting a proposition, which a correlative term never does—till brought into conjunction with a term of which it is not a relative To have called a thing "up" or "brother" is to have already solved its import in some situation It is dead till set to work in some *other* situation

Experience shows, moreover, that certain qualities of things are much more fruitful and much more con-

trollable than others when taken as meanings to be used in drawing conclusions. The term must be of a nature to develop a method of behavior by which to test whether it is the meaning of the situation. Since it is desirable to have a stock of meanings on hand which are so connected that we can move readily from one to another in any direction, the stock is effective in just the degree in which it has been worked into a system—a comprehensive and orderly arrangement. Hence, while all meanings are derived from things which antedate suggestion—or thinking or “consciousness”—not all qualities are equally fitted to be meanings of a wide efficiency, and it is a work of art to select the proper qualities for doing the work. This corresponds to the working over of raw material into an effective tool. A spade or a watchspring is made out of antecedent material, but does not pre-exist as a ready-made tool; and, the more delicate and complicated the work which it has to do, the more art intervenes. These summary remarks will have to pass muster as indicating what a more extensive treatment of a mathematical system of terms would show. Man began by working such qualities as hate and love and fear and beauty into the meanings by which to interpret and control the perplexities of life. When they demonstrated their inefficacy, he had recourse to such qualities as heavy and light, wet and dry, making them into natural essences or explanatory and regulatory meanings. That Greek

mediaeval science did not get very far on these lines is a commonplace. Scientific progress and practical control as systematic and deliberate matters date from the century of Galileo, when qualities which lend themselves to mathematical treatment were seized upon. "The most promising of these ideal systems at first were of course the richer ones, the sentimental ones. The baldest and least promising ones were the mathematical ones, but the history of the latter's application is a history of steadily advancing successes, while that of the sentimentally richer ones is one of relative sterility and failure."¹

There is no problem of why and how the plow fits, or applies to, the garden, or the watchspring to time-keeping. They were made for those respective purposes, the question is how well they do their work, and how they can be reshaped to do it better. Yet they were made out of physical material, men used ready limbs or roots of trees with which to plow before they used metal. We do not measure the worth or reality of the tool by its closeness to its natural prototype, but by its efficiency in doing its work—which connotes a great deal of intervening art. The theory proposed for mathematical distinctions and relations is precisely analogous. They are not the creations of mind except in the sense in which a telephone is a creation of mind. They fit nature because they are derived from natural conditions. Things

¹ James *Psychology*, II, 665

naturally bulge, so to speak, and naturally alter. To seize upon these qualities, to develop them into keys for discovering the meanings of brute, isolated events, and to accomplish this effectively, to develop and order them till they become economical tools (and tools upon tools) for making an unknown and uncertain situation into a known and certain one, is the recorded triumph of human intelligence. The terms and propositions of mathematics are not fictions, they are not called into being by that particular act of mind in which they are used. No more is a self-binding reaper a figment, nor is it called momentarily into being by the man who wants to harvest his grain. But both alike are works of art, constructed for a purpose in doing the things which have to be done.

We may say of terms what Santayana so happily said of expression: "Expression is a misleading term which suggests that something previously known is imitated or rendered, whereas the expression is itself an original fact, the values of which are then referred to the thing expressed, much as the honors of a Chinese mandarin are attributed retroactively to his parents." The natural history of imputation of virtue should prove to the philosopher a profitable theme. Even in its most superstitious forms (perhaps more *obviously* in them than elsewhere) it testifies to the sense of a service to be performed and to a demand for application. The

superstition lies in making the application to antecedents and to ancestors, where it is but a shroud, instead of to descendants, where it is a generating factor.

Every reflection leaves behind it a double effect. Its immediate outcome is (as I tried to show earlier) the direct reorganization of a situation, a reorganization which confers upon its contents new increments of intrinsic meaning. Its indirect and intellectual product is the defining of a meaning which (when fixed by a suitable existence) is a resource in subsequent investigations. I would not despise the assistance lent by the words "term" and "proposition". As slang has it, a pitched baseball is to the batter a "proposition", it states, or makes explicit, what he has to deal with next amid all the surrounding and momentarily irrelevant circumstance. Every statement extracts and sets forth the net result of reflection up to date as a condition of subsequent reflection. This extraction of the kernel of past reflections makes possible a throwing to one side of all the consequences of prior false and futile steps, it enables one to dispense with the experiences themselves and to deal only with their *net* profit. In a favorite phrase of realism, it gives an object "as if there were no experience". It is unnecessary to descant upon the economy of this procedure. It eliminates everything which in spite of its immediate urgency, or vividness, or weight of past authority, is rubbish for the purpose.

in hand. It enables one to get down to business with just that which (presumably) is of importance in subsequent procedure. It is no wonder that these logical kernels have been elevated into metaphysical essences.

The word "term" suggests the limiting condition of every process of reflection. It sets a fence beyond which it is, presumably, a waste to wander--an error. It sets forth that which *must* be taken into account--a limit which is inescapable, something which is to ratiocination what the brute datum is to observation. In classic phrase, it is a notion, that is, a *noting*, of the distinctions which have been fixed for the purposes of the kind of inquiry now engaged in. One has only to compare the terms of present scientific discourse with those of, say, Aristotle, to see that the importance of terms as instruments of a proper survey of and attack upon existential situations is such that the terms resulting naturally and spontaneously from reflection have been dropped and more effective ones substituted. In one sense, they are all equally objective, aquosity is as genuine, as well as more obvious, a notion as the present chemical conception. But the latter is able to enter a much wider scope of inquiries and to figure in them more prosperously.

As a special class of scientific inquirers develops, terms that were originally *by-products* of reflection become primary objects for the intellectual class. The

"troubles" which occasion reflection are then *intellectual* troubles, discrepancies within some current scheme of propositions and terms. The situation which undergoes reorganization and increase of comprised significance is that of the subject-matter of specialized investigation. Nevertheless the same general method recurs within it, and the resulting objects—the terms and propositions—are for all, except those who produce them, instruments, not terminal objects. The objection to analytic realism as a metaphysics of existence is not so much an undue formalism as its affront to the commonsense-world of action, appreciation, and affection. The affront, due to hypostatizing terms into objects, is as great as that of idealism. A naive realism withstands both affronts.

My interest, however, is not to animadvert upon analytic realism. It is to show how the main tenets of instrumental logic stand in relation to considerations which, although ignored by the idealism which was current when the theory received its first formulation, demand attention—the objective status of data and terms with respect to states of mind or acts of awareness. I have tried to show that the theory, without mutilation or torturing, makes provision for these considerations. They are not objections to it, they are considerations which are involved in it. There are questions at issue, but they concern not matters of logic but matters of fact. They are

questions of the *existential* setting of certain logical distinctions and relations. As to the comparative merits of the two schemes, I have nothing to say beyond what has been said, save that the tendency of the analytic realism is inevitably to treat a difference between the logic of inquiry and of dialectic as if it were itself a matter to be settled by the logic of dialectic. I confess to some fear that a philosophy which fails to identify science with terms and propositions about things which are not terms and propositions, will first exaggerate and then misconstrue the function of dialectics, and land philosophy in a formalism like unto the scholasticism from which the older empiricism with all its defects emancipated those who took it to heart.

VII

Return with me, if you please, to fundamentals. The word "experience" is used freely in the essays and without much explanation. In view of the currency of subjectivistic interpretations of that term, the chief wonder is probably that the doctrine of the essays was not more misunderstood than was actually the case. I have already said something designed to clarify the sense in which the term was used. I now come back to the matter. What is the reason for using the term at all in philosophy? The history of philosophy supplies, I think, the answer. No matter how subjective a turn was given to the word

by Hume and Kant, we have only to go to an earlier period to see that the appeal to experience in philosophy was coincident with the emancipation of science from occult essences and causes, and with the substitution of methods of observation, controlled by experimentation and employing mathematical considerations, for methods of mere dialectic definition and classification. The appeal to experience was the cry of the man from Missouri—the demand to be shown. It sprang from the desire to command nature by observing her, instead of anticipating her in order to deck her with aesthetic garlands and hold her with theological chains. The significance of experience was not that sun and moon, stick and stone, are creatures of the senses, but that men would not put their trust any longer in things which are said, however authoritatively, to exist, unless these things are capable of entering into specifiable connections with the organism and the organism with them. It was an emphatic assertion that until men could see *how* things got into belief, and what they did when they got there, intellectual acceptance would be withheld.

Has not the lesson, however, been so well learned that we can drop reference to experience? Would that such were the case. But the time does not seem to have come. Some things enter by way of the imagination, stimulated by emotional preferences and biases. For *certain* purposes, they are not

the worse for having entered by that gate, instead of through sensory-motor adjustments. Or they may have entered because of the love of man for logical form and symmetry and system, and because of the emotional satisfaction which harmony awakens in a sensitive soul. They too need not be any worse for all that. But surely it is among the businesses of philosophy to discriminate between the kinds of goodness possessed by different kinds of things. And how can it discriminate unless by telling by what road they got into our experience and what they do after they get there? Assuredly the difference is not in *intrinsic* content. It is not because of self-obvious and self-contained traits of the immediate terms that Dante's world belongs to poetry and Newton's to scientific astronomy. No amount of pure inspection and excogitation could decide which belongs to which world. The difference in status and claim is made by what we call experience: by the place of the two systems in experience with respect to their generation and consequences. And assuredly any philosophy which takes science to be not an *account* of the world (which it is), but a literal and exhaustive apprehension of it in its full reality, a philosophy which therefore has no place for poetry or possibilities, still needs a theory of experience.

If a scientific man be asked what is truth, he will reply—if he frame his reply in terms of his practice and not of some convention—that which is accepted upon

adequate evidence And if he is asked for a description of adequacy of evidence, he certainly will refer to matters of observation and experiment. It is not the self-inclosed character of the terms and propositions nor their systematic ordering which settles the case for him, it is the way they were obtained and what he can do with them in getting other things And when a mathematician or logician asks philosophy to abandon this method, then is just the time to be most vigorous in insisting upon the necessity of reference to "experience" in order to fix the import of mathematical and logical pretensions When students influenced by the symmetry and system of mathematics cease building up their philosophies in terms of traits of mathematical subject-matter in isolation, then empirical philosophers will have less call to mention experience Meantime, I know of no way of fixing the scope and claims of mathematics in philosophy save to try to point out just at what juncture it enters experience and what work it does after it has got entrance I have made such an attempt in my account of the fixation and handling of suggestions as meanings It is defective enough, but the defects are to be remedied by a better empirical account and not by setting up against experience the claims of a logic aloof from experience.

The objection then to a logic which rules out knowledge getting, and which bases logic exclusively upon the traits of known objects, is that it is self-

contradictory There is no way to know what are the traits of known objects, as distinct from imaginary objects, or objects of opinion, or objects of unanalytic common-sense, save by referring to the operations of getting, using, and testing evidence—the processes of knowledge getting I am making no appeal for skepticism at large, I am not questioning the right of the physicist, the mathematician, or the symbolic logicist to go ahead with accepted objects and do what he can with them. I am pointing out that anyone who professes to be concerned with finding out what knowledge *is*, has for his primary work the job of finding out why it is so much safer to proceed with just these objects, than with those, say, of Aristotelian science Aristotle was not lacking in acuteness nor in learning To him it was clear that objects of knowledge are the things of ordinary perception, so far as they are referred to a form which comparison of perceived things, in the light of a final cause, makes evident If this view of the objects of knowledge has gone into the discard, if quite other objects of knowledge are now received and employed, it is because the methods of *getting* knowledge have been transformed, till, for the working scientist, “objects of knowledge” mean precisely the objects which have been obtained by approved processes of inquiry To exclude consideration of these processes is thus to throw away the key to understanding knowledge and its objects There is a certain ironical humor in taking advantage

of all the improved methods of experimental inquiry with respect to all objects of knowledge—save one, knowledge itself, in denying their relevancy to knowing knowledge, and falling back upon the method everywhere else disavowed—the method of relying upon isolated, self-contained properties of subject-matter

One of the points which gave much offense in the essays was the reference to genetic method—to a natural history of knowledge. I hope what has now been said makes clearer the nature of that reference. I was to blame for not making the point more explicit; but I cannot altogether blame myself for my naïveté in supposing that others understood by a natural history of knowledge what I understood by it. It had not occurred to me that anyone would think that the history by which human ignorance, error, dogma, and superstition had been transformed, even in its present degree of transformation, into knowledge was something which had gone on exclusively inside of men's heads, or in an inner consciousness. I thought of it as something going on in the world, in the observatory and the laboratory, and in the application of laboratory results to the control of human health, well-being, and progress. When a biologist says that the way to understand an organ, or the sociologist that the way to know an institution, resides in its genesis and history, he is understood to mean *its* history. I took the same liberty for knowl-

edge, that is, for science. The accusation of "subjectivism" taken in this light appears as a depressing revelation of what the current opinion about the processes of knowledge is. To stumble on a stone need not be a process of knowledge, to hit it with a hammer, to pour acid upon it, to put pieces in the crucible, to subject things to heat and pressure to see if one can make a similar stone, *are* processes of knowledge. So is fixing suggestions by attaching names, and so is devising ways of putting these terms together so that new suggestions will arise, or so that suggestions may be transferred from one situation to another. But not one of these processes is "subjective" in any sense which puts subjectivity in opposition to the public out-of-doors world of nature and human companionship. To set genesis in opposition to analysis is merely to overlook the fact that the sciences of existence have found that considerations of genesis afford their most effective methods of analysis.¹

The same kind of consideration applies to the favorable view taken of psychology. If reference to modes and ways of experience—to experiencing—is important for understanding the things with which philosophy deals, then psychology is useful as a matter of course. For what is meant by psychology is

¹ I have even seen, in a criticism of the essays, the method of genesis opposed to the method of experimentation—as if experimentation were anything but the generation of some special object!

precisely a discrimination of the acts and attitudes of the organism which have a bearing upon respective subject-matters and which have accordingly to be taken account of before the subject-matters can be properly discriminated. The matter was especially striking in the case of Lotze. He protested constantly against the use of psychology, and yet his own data and procedures were infected at every turn by psychology, and, if I am at all correct, by a false psychology. The particular separation which he made between psychology and logic rested indeed upon a particular psychological assumption. The question is worth asking. Is not the marked aversion on the part of some philosophers to any reference to psychology a Freudian symptom?

A word more upon the place assigned by the essays to *need* and *purpose* and the humanistic factor generally. To save time I may quote a sentence from an early review which attributes to the essays the following doctrine: "If the plan turns out to be useful for our need, it is correct—the judgment is true. The real-ideal distinction is that between stimulus of environment and plan of action or tentative response. Both real and ideal are equally experiences of the individual man." These words can be interpreted either so as to convey the position fairly, or so as radically to misconceive it, the latter course is a little easier, as the words stand. That "real

and ideal" are experiences of the individual man in the sense that they actually present themselves as specifications which can be studied by any man who desires to study them is true enough. That such a study is as much required for determining their characters as it is for determining those of carbon dioxide or of the constitution of Great Britain is also the contention of the paper. But if the words quoted suggest to anyone that the real or even the ideal are somehow possessions of an individual man, things secreted somewhere about him and then ejected, I can only say that I cannot understand the doctrine. I know of no ready-made and antecedent conception of "the individual man." Instead of telling about the nature of experience by means of a prior conception of individual man, I find it necessary to go to experience to find out what is meant by "individual" and by "man", and also by "the." Consequently even in such an expression as "my experience," I should wish not to contradict this idea of method by using the term "my" to swallow up the term "experience," any more than if I said "my house," or "my country." On the contrary, I should expect that any intelligible and definite use of such phrases would throw much more light upon "me" than upon "house" or "country"—or "experience."

The possible misunderstanding is, I think, actual in the reference to "our deeds" as a criterion of the

correctness of truth of an idea or plan According to the essays, it is the needs of a *situation* which are determinative They evoke thought and the need of knowing, and it is only within the situation that the identification of the needs with a self occurs; and it is only by reflection upon the place of the agent in the encompassing situation that the nature of *his* needs can be determined In fact, the actual occurrence of a disturbed, incomplete, and needy *situation* indicates that *my* present need is precisely to investigate, to explore, to hunt, to pull apart things now tied together, to project, to plan, to invent, and then to test the outcome by seeing how it works as a method of dealing with hard facts One source of the demand, in short, for reference to experience as the encompassing universe of discourse is to keep us from taking such terms as "self," "my," "need," "satisfaction," etc , as terms whose meanings can be accepted and proved either by themselves or by even the most extensive dialectic reference to other terms.

Terms like "real" and "ideal," "individual," "man," "my," certainly allow of profitable dialectic (or purely propositional) clarification and elaboration But nothing is settled until these discursive findings have been applied, through action, to things, and an experience has been effected, which either meets or evades the specification conceptually laid down To suppose, for example, that the import of the term "ideal" can be settled apart from exhibiting in

experience some specific affair, is to maintain in philosophy that belief in the occult essence and hidden cause which science had to get rid of before it got on the right track. Because idealism misconceived experience is no reason for throwing away its significant point of contact with modern science and for having recourse then to objects distinguished from old-fashioned *Dinge an Sich* only because they involve just that reference to those experiences by which they were established and to which they are applied that propositional or analytic realism professedly and elaborately ignores. In revenge, this ignoring leaves on our hands the "me," or knowing self, as a separate thing within which experience falls (instead of its falling in a specifiable place within experience), and generates the insoluble problem of how a subjective experience can beget objective knowledge.

In concluding, let me say that reference to experience seems at present to be the easiest way of realizing the continuities among subject-matters that are always getting split up into dualisms. A creation of a world of subsistences or essences which are quite other than the world of natural existences (which are other than natural existences adapted to the successful performance of inference) is in itself a technical matter, though a discouraging one to a philosopher expertly acquainted with all the difficulties which that view has generated from the time of Plato down. But the assistance which such a

philosophy lends to the practical and current divorce of the "ideal" from the natural world makes it a thing to be dreaded for other than professional reasons. God only knows how many of the sufferings of life are due to a belief that the natural scene and operations of our life are lacking in ideal import, and to the consequent tendency to flee for the lacking ideal factors to some other world inhabited exclusively by ideals. That such a cut-off, ideal world is impotent for direction and control and change of the natural world follows as a matter of course. It is a luxury, it belongs to the "genteel tradition" of life, the persistence of an "upper" class given to a detached and parasitic life. Moreover, it places the scientific inquirer within that irresponsible class. If philosophers could aid in making it clear to a troubled humanity that ideals are continuous with natural events, that they but represent their possibilities, and that recognized possibilities form methods for a conduct which may realize them in fact, philosophers would enforce the sense of a social calling and responsibility. I do not say that pointing out the continuity and interaction of various attitudes and interests in experience is the only way of effecting this consummation. But for a large number of persons today it is the readiest way.

Much may be said about that other great rupture of continuity which analytic realism would maintain that between the world and the knower as something

outside of it, engaged in an otiose contemplative survey of it I can understand the social conditions which generated this conception of an aloof knower I can see how it protected the growth of responsible inquiry which takes effect in change of the environment, by cultivating a sense of the innocuousness of knowing, and thus lulling to sleep the animosity of those who, being in control, had no desire to permit reflection which had practical import I can see how specialists at any time, professional knowers, so to speak, find in this doctrine a salve for conscience—a solace which all thinkers need as long as an effective share in the conduct of affairs is not permitted them Above all, I can see how seclusion and the absence of the pressure of immediate action developed a more varied curiosity, greater impartiality, and a more generous outlook But all this is no reason for continuing the idealization of a remote and separate mind or knower now that the method of intelligence is perfected, and changed social conditions not only permit but demand that intelligence be placed within the procession of events An intellectual integrity, an impartiality and detachment, which is maintained only in seclusion is unpleasantly reminiscent of other identifications of virtue with the innocence of ignorance To place knowledge where it arises and operates in experience is to know that, as it arose because of the troubles of man, it is confirmed in reconstructing the conditions which occasioned those troubles

Genuine intellectual integrity is found in experimental knowing. Until this lesson is fully learned, it is not safe to dissociate knowledge from experiment nor experiment from experience.

II

THE RELATIONSHIP OF THOUGHT AND ITS SUBJECT-MATTER

No one doubts that thought, at least reflective as distinct from what is sometimes called constitutive thought, is derivative and secondary. It comes after something and out of something, and for the sake of something. No one doubts that the thinking of everyday practical life and of science is of this reflective type. We think about, we reflect over. If we ask what it is which is primary and radical to thought, if we ask what is the final objective for the sake of which thought intervenes, if we ask in what sense we are to understand thought as a derived procedure, we are plunging ourselves into the very heart of the logical problem. the relation of thought to its empirical antecedents and to its consequent, truth, and the relation of truth to reality

Yet from the naïve point of view no difficulty attaches to these questions. The antecedents of thought are our universe of life and love, of appreciation and struggle. We think about anything and everything: snow on the ground, the alternating clanks and thuds that rise from below, the relation of the Monroe Doctrine to the embargo in Venezuela, the relation of art to industry, the poetic

quality of a painting by Botticelli; the battle of Marathon, the economic interpretation of history, the proper definition of cause, the best method of reducing expenses, whether and how to renew the ties of a broken friendship, the interpretation of an equation in hydrodynamics, etc

Through the madness of this miscellaneous citation there appears so much of method—anything—event, act, value, ideal, person, or place—may be an object of thought. Reflection busies itself alike with physical nature, the record of social achievement, and the endeavors of social aspiration. It is with reference to *such* affairs that thought is derivative, it is with reference to them that it intervenes or mediates. Taking some part of the universe of action, of affection, of social construction, under its special charge, and having busied itself therewith sufficiently to meet the special difficulty presented, thought releases that topic and enters into further more direct experience.

Sticking for a moment to this naive standpoint, we recognize a certain rhythm of direct practice and derived theory, of primary construction and of secondary criticism, of living appreciation and of abstract description, of active endeavor and of pale reflection. We find that every more direct primary attitude passes upon occasion into its secondary deliberative and discursive counterpart. We find that when the latter has done its work it passes away and passes on. From the naive standpoint such

rhythm is taken as a matter of course. There is no attempt either to state the nature of the occasion which demands the thinking attitude, or to formulate a theory of the standard by which is judged its success. No general theory is propounded as to the exact relationship between thinking and what antecedes and succeeds it. Much less do we ask how empirical circumstances can generate rationality of thought, nor how it is possible for reflection to lay claim to power of determining truth and thereby of constructing further reality.

If we were to ask the thinking of naïve life to present, with a minimum of theoretical elaboration, its conception of its own practice, we should get an answer running not unlike this. Thinking is a kind of activity which we perform at specific need, just as at other need we engage in other sorts of activity—as converse with a friend, draw a plan for a house; take a walk, eat a dinner, purchase a suit of clothes, etc. In general, its material is anything in the wide universe which seems to be relevant to this need—anything which may serve as a resource in defining the difficulty or in suggesting modes of dealing effectively with it. The measure of its success, the standard of its validity, is precisely the degree in which the thinking actually disposes of the difficulty and allows us to proceed with more direct modes of experiencing, that are forthwith possessed of more assured and deepened value.

If we inquire why the naïve attitude does not go on to elaborate these implications of its own practice into a systematic theory, the answer, on its own basis, is obvious. Thought arises in response to its own occasion. And this occasion is so exacting that there is time, as there is need, only to do the thinking which is needed in that occasion—not to reflect upon the thinking itself. Reflection follows so naturally upon its appropriate cue, its issue is so obvious, so practical, the entire relationship is so organic, that once grant the position that thought arises in reaction to specific demand, and there is not the particular type of thinking called logical theory because there is not the practical demand for reflection of that sort. Our attention is taken up with particular questions and specific answers. What we have to reckon with is not the problem of, How can I think *uberhaupt*? but, How shall I think right *here and now*? Not what is the test of thought at large, but what validates and confirms *this* thought?

In conformity with this view, it follows that a generic account of our thinking behavior, the generic account termed logical theory, arises at historic periods in which the situation has lost the organic character above described. The general theory of reflection, as over against its concrete exercise, appears when occasions for reflection are so overwhelming and so mutually conflicting that specific adequate response in thought is blocked. Again, it shows itself when

practical affairs are so multifarious, complicated, and remote from control that thinking is held off from successful passage into them

Anyhow (sticking to the naïve standpoint), it is true that the stimulus to that particular form of reflective thinking termed logical theory is found when circumstances require the act of thinking and nevertheless impede clear and coherent thinking in detail, or when they occasion thought and then prevent the results of thinking from exercising directive influence upon the immediate concerns of life. Under these conditions we get such questions as the following. What is the relation of rational thought to crude or unreflective experience? What is the relation of thought to reality? What is the barrier which prevents reason from complete penetration into the world of truth? What is it that makes us live alternately in a concrete world of experience in which thought as such finds not satisfaction, and in a world of ordered thought which is yet only abstract and ideal?

It is not my intention here to pursue the line of historical inquiry thus suggested. Indeed, the point would not be mentioned did it not serve to fix attention upon the nature of the logical problem.

It is in dealing with this latter type of question that logical theory has taken a turn which separates it widely from the theoretical implications of practical deliberation and of scientific research. The

two latter, however much they differ from each other in detail, agree in a fundamental principle. They both assume that every reflective problem and operation arises with reference to some *specific* situation, and has to subserve a *specific* purpose dependent upon its own occasion. They assume and observe distinct limits—limits from which and to which. There is the limit of origin in the needs of the particular situation which evokes reflection. There is the limit of terminus in successful dealing with the particular problem presented—or in retiring, baffled, to take up some other question. The query that at once faces us regarding the nature of logical theory is whether reflection upon reflection shall recognize these limits, endeavoring to formulate them more exactly and to define their relationships to each other more adequately, or shall it abolish limits, do away with the matter of specific conditions and specific aims of thought, and discuss thought and its relation to empirical antecedents and rational consequents (truth) at large?

At first blush, it might seem as if the very nature of logical theory as generalization of the reflective process must of necessity disregard the matter of particular conditions and particular results as irrelevant. How, the implication runs, could reflection become generalized save by elimination of details as irrelevant? Such a conception in fixing the central problem of logic fixes once for all its future career

and material. The essential business of logic is henceforth to discuss the relation of thought as such to reality as such. It may, indeed, involve much psychological material, particularly in the discussion of the processes which antecede thinking and which call it out. It may involve much discussion of the concrete methods of investigation and verification employed in the various sciences. It may busily concern itself with the differentiation of various types and forms of thought—different modes of conceiving, various conformations of judgment, various types of inferential reasoning. But it concerns itself with any and all of these three fields, not on their own account or as ultimate, but as subsidiary to the main problem—the relation of thought as such, or at large, to reality as such, or at large. Some of the detailed considerations referred to may throw light upon the terms under which thought transacts its business with reality, upon, say, certain peculiar limitations it has to submit to as best it may. Other considerations throw light upon the ways in which thought gets at reality. Still other considerations throw light upon the forms which thought assumes in attacking and apprehending reality. But in the end all this is incidental. In the end the one problem holds. How do the specifications of thought as such hold good of reality as such? In fine, logic is supposed to grow out of the epistemological inquiry and to lead up to its solution.

From this point of view various aspects of logical theory are well stated by an author whom later on we shall consider in some detail. Lotze¹ refers to "universal forms and principles of thought which hold good everywhere both in judging of reality and in weighing possibility, *irrespective of any difference in the objects*" This defines the business of *pure* logic. This is clearly the question of thought as such—of thought at large or in general. Then we have the question "of how far the most complete structure of thought . . . can claim to be an adequate account of that which we seem compelled to assume as the object and occasion of our ideas" This is clearly the question of the relation of thought at large to reality at large. It is epistemology. Then comes "applied logic," having to do with the actual employment of concrete forms of thought with reference to investigation of specific topics and subjects. This "applied" logic would, if the standpoint of practical deliberation and of scientific research were adopted, be the sole genuine logic. But the existence of thought *in itself* having been agreed upon, we have in this "applied" logic only an incidental inquiry of how the particular resistances and oppositions which "pure" thought meets from particular matters may best be discounted. It is concerned with methods of investigation which obviate defects in the relationship of thought at large to reality at large, as these

¹ *Logic* (translation, Oxford, 1888), I, 10, 11. *Italics mine.*

present themselves under the limitations of human experience. It deals merely with hindrances, and with devices for overcoming them; it is directed by considerations of utility. When we reflect that this field includes the entire procedure of practical deliberation and of concrete scientific research, we begin to realize something of the significance of the theory of logic which regards the limitations of specific origination and specific outcome as irrelevant to its main problem, which assumes an activity of thought "pure" or "in itself," that is, "irrespective of any difference in its objects."

This suggests, by contrast, the opposite mode of stating the problem of logical theory. Generalization of the nature of the reflective process certainly involves elimination of much of the specific material and contents of the thought-situations of daily life and of critical science. Quite compatible with this, however, is the notion that it seizes upon *certain* specific conditions and factors, and aims to bring them to clear consciousness—not to abolish them. While eliminating the particular material of particular practical and scientific pursuits, (1) it may strive to hit upon the common denominator in the various situations which are antecedent or primary to thought and which evoke it, (2) it may attempt to show how typical features in the specific antecedents of thought call out diverse typical modes of thought-reaction, (3) it may attempt to state

the nature of the specific consequences in which thought fulfils its career

(1) It does not eliminate dependence upon specific occasions as provocative of thought, but endeavors to define *what* in the various occasions renders them thought-provoking. The specific occasion is not eliminated, but insisted upon and brought into the foreground. Consequently, empirical considerations are not subsidiary incidents, but are of essential importance so far as they enable us to trace the generation of the thought-situation. (2) From this point of view the various types and modes of conceiving, judging, and inference are treated, not as qualifications of thought *per se* or at large, but of reflection engaged in its specific, most economic, effective response to its own particular occasion, they are adaptations for control of stimuli. The distinctions and classifications that have been accumulated in "formal" logic are relevant data, but they demand interpretation from the standpoint of use as organs of adjustment to material antecedents and stimuli. (3) Finally the question of validity, or ultimate objective of thought, is relevant, but relevant as a matter of the specific issue of the specific career of a thought-function. All the typical investigatory and verificatory procedures of the various sciences indicate the ways in which thought actually brings to successful fulfilment its dealing with various types of problems

While the epistemological type of logic may, as we have seen, leave (under the name of applied logic) a subsidiary place open for the instrumental type, the type which deals with thinking as a specific procedure relative to a specific antecedent occasion and to a subsequent specific fulfilment is not able to reciprocate the favor. From its point of view, an attempt to discuss the antecedents, data, forms, and objectives of thought, apart from reference to particular position occupied and particular part played in the growth of experience, is to reach results which are not so much either true or false as they are radically meaningless—because they are considered apart from limits. Its results are not only abstractions (for all theorizing ends in abstractions), but abstractions without possible reference or bearing. From this point of view, the taking of something (whether that something be a thinking activity, its empirical stimulus, or its objective goal), apart from the limits of a historic or developing situation, is the essence of *metaphysical* procedure—in that sense of metaphysics which makes a gulf between it and science.

As the reader has doubtless anticipated, it is the object of this chapter to present the problem and industry of reflective thought from the standpoint of naive experience, using the term in a sense wide enough to cover both practical procedure and concrete scientific research. I resume by saying that this point of view knows no fixed distinction between

the empirical things and values of unreflective life and the most abstract process of rational thought. It knows no fixed gulf between the highest flight of theory and a control of the details of practical construction and behavior. It passes, according to the occasion and opportunity of the moment, from the attitude of loving and struggling and doing to that of thinking and the reverse. Its contents or material shift their values back and forth from technological or utilitarian to aesthetic, ethical, or affectional. It utilizes data of perception of meaning or of discursive ideation as need calls, just as an inventor now utilizes heat, now mechanical strain, now electricity, according to the demands set by his aim. Anything from past experience may be taken which appears to be an element in either the statement or the solution of the present problem. Thus we understand the coexistence, without contradiction, of an indeterminate possible field and a limited actual field. The undefined range of possible materials becomes specific through reference to an end.

In all this, there is no difference of kind between the methods of science and those of the plain man. The difference is the greater control by science of the statement of the problem, and of the selection and use of relevant material, both sensible and conceptual. The two are related to each other just as the hit-or-miss, trial-and-error inventions of uncivilized man stand to the deliberate and consecutively persistent efforts

of a modern inventor to produce a certain complicated device for doing a comprehensive piece of work. Neither the plain man nor the scientific inquirer is aware, as he engages in his reflective activity, of any transition from one sphere of existence to another. He knows no two fixed worlds—reality on one side and mere subjective ideas on the other, he is aware of no gulf to cross. He assumes uninterrupted, free, and fluid passage from ordinary experience to abstract thinking, from thought to fact, from things to theories and back again. Observation passes into development of hypothesis, deductive methods pass into use in description of the particular, inference passes into action, all with no sense of difficulty save those found in the particular task in question. The fundamental assumption is *continuity*.

This does not mean that fact is confused with idea, or observed datum with voluntary hypothesis, theory with doing, any more than a traveler confuses land and water when he journeys from one to the other. It simply means that each is placed and used with reference to service rendered the other, and with reference to the future use of the other.

Only the epistemological spectator of traditional controversies is aware of the fact that the everyday man and the scientific man in this free and easy intercourse are rashly assuming the right to glide over a cleft in the very structure of reality. This fact raises a query not favorable to the epistemologist.

Why is it that the scientific man, who is constantly plying his venturous traffic of exchange of facts for ideas, of theories for laws, of real things for hypotheses, should be so wholly unaware of the radical and generic (as distinct from specific) difficulty of the undertakings in which he is engaged? We thus come afresh to our inquiry Does not the epistemological logician unwittingly transfer the specific difficulty which always faces the scientific man—the difficulty in detail of correct and adequate translation back and forth of *this* set of facts and *this* group of reflective consideration—into a totally different problem of the wholesale relation of thought at large to reality in general? If such be the case, it is clear that the very way in which the epistemological type of logic states the problem of thinking, in relation both to empirical antecedents and to objective truth, makes that problem insoluble Working terms, terms which as working are flexible and historic, relative and methodological, are transformed into absolute, fixed, and predetermined properties of being

We come a little closer to the problem when we recognize that every scientific inquiry passes historically through at least four stages (a) The first of these stages is, if I may be allowed the bull, that in which scientific inquiry does not take place at all, because no problem or difficulty in the quality of the experience presents itself to provoke reflection We have only to cast our eye back from the existing

status of any science, or back from the status of any particular topic in any science, to discover a time when no reflective or critical thinking busied itself with the matter—when the facts and relations were taken for granted and thus were lost and absorbed in the net meaning which accrued from the experience

(b) After the dawning of the problem there comes a period of occupation with relatively crude and unorganized facts—hunting for, locating, and collecting raw material. This is the empiric stage, which no existing science, however proud in its attained rationality, can disavow as its own progenitor

(c) Then there is also a speculative stage—a period of guessing, of making hypotheses, of framing ideas which later on are labeled and condemned as only ideas. There is a period of distinction-making and classification-making which later on is regarded as only mentally gymnastic in character. And no science, however proud in its present security of experimental assurance, can disavow a scholastic ancestor

(d) Finally, there comes a period of fruitful interaction between the mere ideas and the mere facts—a period when observation is determined by experimental conditions depending upon the use of certain guiding conceptions, when reflection is directed and checked at every point by the use of experimental data, and by the necessity of finding such a form for itself as will enable it to serve in a deduction leading to evolution of new meanings, and

ultimately to experimental inquiry which brings to light new facts. In the emerging of a more orderly and significant region of fact, and of a more coherent and self-luminous system of meaning, we have the natural limit of evolution of the logic of a given science.

But consider what has happened in this historic record. Unanalyzed experience has broken up into distinctions of facts and ideas, the factual side has been developed by indefinite and almost miscellaneous descriptions and cumulative listings, the conceptual side has been developed by unchecked and speculative elaboration of definitions, classifications, etc. Then there has been a relegation of accepted meanings to the limbo of mere ideas, there has been a passage of some of the accepted facts into the region of mere hypothesis and opinion. Conversely, there has been a continued issuing of ideas from the region of hypotheses and theories into that of facts, of accepted objective and meaningful objects. Out of a world of only *seeming* facts, and of only *doubtful* ideas, there emerges a world continually growing in definiteness, order, and luminosity.

This progress, verified in every record of science, is an absolute monstrosity from the standpoint of the epistemology which assumes a thought in general, on one side, and a reality in general, on the other. The reason that it does not present itself as such a monster and miracle to those actually concerned with it is

because *continuity* of reference and of use controls all diversities in the modes of existence specified and the types of significance assigned. The distinction of meaning and fact is treated in the growth of a science, or of any particular scientific problem, as an *induced* and *intentional* practical division of labor, as assignments of relative position with reference to performance of a task, as deliberate distribution of forces at command for their more economic use. The absorption of bald fact and hypothetical idea into the formation of a single world of scientific apprehension and comprehension is but the successful achieving of the aim on account of which the distinctions in question were instituted.

Thus we come back to the problem of logical theory. To take the distinctions of thought and fact, etc., as ontological, as inherently fixed in the makeup of the structure of being, results in treating the actual technique of scientific inquiry and scientific control as a mere subsidiary topic—ultimately of only utilitarian worth. It also states the terms upon which thought and being transact business in a way so totally alien to concrete experience that it creates a problem which can be discussed only in terms of itself—not in terms of the conduct of life. As against this, the logic which aligns itself with the origin and employ of reflective thought in everyday life and critical science follows the natural history of thinking as a life-process having its own generating

antecedents and stimuli, its own states and career, and its own specific objective or limit

This point of view makes it possible for logical theory to come to terms with psychology. When logic is considered as having to do with the wholesale activity of thought *per se*, the question of the historic process by which this or that particular thought came to be, of how its object happens to present itself as sensory, or perceptual, or conceptual, is quite irrelevant. These things are mere temporal accidents. The psychologist (not lifting his gaze from the realm of the changeable) may find in them matters of interest. His whole industry is just with natural history—to trace events as they mutually excite and inhibit one another. But the logician, we are told, has a deeper problem and an outlook of more unbounded horizon. He deals with the question of the eternal nature of thought and its eternal validity in relation to an eternal reality. He is concerned, not with genesis, but with value, not with a historic cycle, but with absolute entities and relations.

Still the query haunts us. Is this so in truth? Or has the logician of a certain type arbitrarily made it so by taking his terms apart from reference to the specific occasions in which they arise and situations in which they function? If the latter, then the very denial of historic relationship, the denial of the significance of historic method, is indicative of the unreal character of his own abstraction. It means

in effect that the affairs under consideration have been isolated from the conditions in which alone they have determinable meaning and assignable worth. It is astonishing that, in the face of the advance of the evolutionary method in natural science, any logician can persist in the assertion of a rigid difference between the problem of origin and of nature, between genesis and analysis, between history and validity. Such assertion simply reiterates as final a distinction which grew up and had meaning in pre-evolutionary science. It asserts, against the most marked advance which scientific method has yet made, a survival of a crude period of logical scientific procedure. We have no choice save either to conceive of thinking as a response to a specific stimulus or else to regard it as something 'in itself,' having just in and of itself certain traits, elements, and laws. If we give up the last view, we must take the former. In this case it will still possess distinctive traits, but they will be traits of a specific response to a specific stimulus.

The significance of the evolutionary method in biology and social history is that every distinct organ, structure, or formation, every grouping of cells or elements, is to be treated as an instrument of adjustment or adaptation to a particular environing situation. Its meaning, its character, its force, is known when, and only when, it is considered as an arrangement for meeting the conditions involved in some specific situation. This analysis is carried out by

tracing successive stages of development—by endeavoring to locate the particular situation in which each structure has its origin, and by tracing the successive modifications through which, in response to changing media, it has reached its present conformation¹ To persist in condemning natural history from the standpoint of what natural history meant before it identified itself with an evolutionary process is not so much to exclude the natural-history standpoint from philosophic consideration as it is to evince ignorance of what it signifies

Psychology as the natural history of the various attitudes and structures through which experiencing passes, as an account of the conditions under which this or that attitude emerges, and of the way in which it influences, by stimulation or inhibition, production of other states or conformations of reflection, is indispensable to logical evaluation the moment we treat logical theory as an account of thinking as a response to its own generating conditions, and consequently judge its validity by reference to its efficiency in meeting its problems. The historical point of view describes the sequence, the normative follows the history to its conclusion, and then turns back and judges each historical step by viewing it in reference to its own outcome

In the course of changing experience we keep our balance in moving from situations of an affectional

¹ See *Philosophical Review*, XI, 117-20

quality to those which are practical or appreciative or reflective, because we bear constantly in mind the context in which any particular distinction presents itself. As we submit each characteristic function and situation of experience to our gaze, we find it has a dual aspect. Wherever there is striving there are obstacles, wherever there is affection there are persons who are attached, wherever there is doing there is accomplishment, wherever there is appreciation there is value, wherever there is thinking there is material-in-question. We keep our footing as we move from one attitude to another, from one characteristic quality to another, because of the position occupied in the whole movement by the particular function in which we are engaged.

The distinction *between* each attitude and function and its predecessor and successor is serial, dynamic, operative. The distinctions *within* any given operation or function are structural, contemporaneous, and distributive. Thinking follows, we will say, striving, and doing follows thinking. Each in the fulfilment of its own function inevitably calls out its successor. But coincident, simultaneous, and correspondent *within* doing is the distinction of doer and of deed, *within* the function of thought, of thinking and material thought upon, within the function of striving, of obstacle and aim, of means and end. We keep our paths straight because we do not confuse the sequential and functional relationship of types

of experience with the contemporaneous and structural distinctions of elements within a given function. In the seeming maze of endless confusion and unlimited shiftings, we find our way by the means of the stimulations and checks occurring within the process in which we are actually engaged. Operating within empirical situations we do not contrast or confuse a condition which is an element in the formation of one operation with the status which is one of the distributive terms of another function. When we ignore these specific empirical clews and limitations, we have at once an insoluble, because meaningless, problem upon our hands.

Now the epistemological logician deliberately shuts himself off from those cues and checks upon which the plain man instinctively relies, and which the scientific man deliberately searches for and adopts as constituting his technique. Consequently he is likely to set the attitude which has place and significance only in one of the serial functional situations of experience over against the active attitude which describes part of the structural constitution of another situation, or with equal lack of justification to assimilate materials characteristic of different stages to one another. He sets the agent, as he is found in the intimacy of love or appreciation, over against the externality of the fact, as that is defined within the reflective process. He takes the material which thought selects as its problematic data as identical with the significant con-

tent which results from successful pursuit of inquiry; and this in turn he regards as the material which was presented before thinking began, whose peculiarities were the means of awakening thought. He identifies the final deposit of the thought-function with its own generating antecedent, and then disposes of the resulting surd by reference to some metaphysical consideration, which remains when logical inquiry, when science (as interpreted by him), has done its work. He does this, not because he prefers confusion to order, or error to truth, but simply because, when the chain of historic sequence is cut, the vessel of thought is afloat to veer upon a sea without soundings or moorings. There are but two alternatives: either there is an object "in itself" of mind "in itself," or else there are a series of situations where elements vary with the varying functions to which they belong. If the latter, the only way in which the characteristic terms of situations can be defined is by discriminating the functions to which they belong. And the epistemological logician, in choosing to take his question as one of thought which has its own form just as "thought," apart from the limits of the special work it has to do, has deprived himself of these supports and stays.

The problem of logic has a more general and a more specific phase. In its generic form, it deals with this question, How does one type of functional situation and attitude in experience pass out of and into another, for example, the technological or utilitarian

into the aesthetic, the aesthetic into the religious, the religious into the scientific, and this into the socio-ethical and so on? The more specific question is: How does the particular functional situation termed the reflective behave? How shall we describe it? What in detail are its diverse contemporaneous distinctions, or divisions of labor, its correspondent *statuses*, in what specific ways do these operate with reference to each other so as to effect the specific aim which is proposed by the needs of the affair?

This chapter may be brought to conclusion by reference to the more ultimate value of the logic of experience, of logic taken in its wider sense, that is, as an account of the sequence of the various typical functions or situations of experience in their determining relations to one another. Philosophy, defined as such a logic, makes no pretense to be an account of a closed and finished universe. Its business is not to secure or guarantee any particular reality or value. *Per contra*, it gets the significance of a method. The right relationship and adjustment of the various typical phases of experience to one another is a problem felt in every department of life. Intellectual rectification and control of these adjustments cannot fail to reflect itself in an added clearness and security on the practical side. It may be that general logic cannot become an instrument in the immediate direction of the activities of science or art or industry, but it is of value in criticizing and organizing tools of

immediate research It also has direct significance in the valuation for social or life-purposes of results achieved in particular branches. Much of the immediate business of life is badly done because we do not know the genesis and outcome of the work that occupies us. The manner and degree of appropriation of the goods achieved in various departments of social interest and vocation are partial and faulty because we are not clear as to the due rights and responsibilities of one function of experience in reference to others.

The value of research for social progress, the bearing of psychology upon educational procedure, the mutual relations of fine and industrial art, the question of the extent and nature of specialization in science in comparison with the claims of applied science, the adjustment of religious aspirations to scientific statements; the justification of a refined culture for a few in face of economic insufficiency for the mass, the relation of organization to individuality—such are a few of the many social questions whose answer depends upon the possession and use of a general logic of experience as a method of inquiry and interpretation. I do not say that headway cannot be made in such questions apart from the method indicated—a logic of experience. But unless we have a critical and assured view of the juncture in which and with reference to which a given attitude or interest arises, unless we know the service it is thereby called

upon to perform, and hence the organs or methods by which it best functions in that service, our progress is impeded and irregular. We take a part for a whole, a means for an end, or we attack wholesale some interest because it interferes with the deified sway of the one we have selected as ultimate. A clear and comprehensive consensus of social conviction and a consequent concentrated and economical direction of effort are assured only as there is some way of locating the position and rôle of each typical interest and occupation. The domain of opinion is one of conflict, its rule is arbitrary and costly. Only intellectual method affords a substitute for opinion. A general logic of experience alone can do for social qualities and aims what the natural sciences after centuries of struggle are doing for activity in the physical realm.

This does not mean that systems of philosophy which have attempted to state the nature of thought and of reality at large, apart from limits of particular situations in the movement of experience, have been worthless—though it does mean that their industry has been somewhat misapplied. The unfolding of metaphysical theory has made large contributions to positive evaluations of the typical situations and relationships of experience—even when its conscious intention has been quite otherwise. Every system of philosophy is itself a mode of reflection, consequently (if our main contention be true), it too has been evoked

out of specific social antecedents, and has had its use as a response to them. It has effected something in modifying the situation within which it found its origin. It may not have solved the problem which it consciously put itself, in many cases we may freely admit that the question put has been found afterward to be so wrongly put as to be insoluble. Yet exactly the same thing is true, in precisely the same sense, in the history of science. For this reason, if for no other, it is impossible for the scientific man to cast the first stone at the philosopher.

The progress of science in any branch continually brings with it a realization that problems in their previous form of statement are insoluble because put in terms of unreal conditions, because the real conditions have been mixed up with mental artifacts or misconstructions. Every science is continually learning that its supposed solutions are only apparent because the "solution" solves, not the actual problem, but one which has been made up. But the very putting of the question, the very giving of the wrong answer, induces modification of existing intellectual habits, standpoints, and aims. Wrestling with the problem, there is evolution of new technique to control inquiry, there is search for new facts, institution of new types of experimentation, there is gain in the methodic control of experience. And all this is progress. It is only the worn-out cynic, the devitalized sensualist, and the fanatical dogmatist who

interpret the continuous change of science as proving that, since each successive statement is wrong, the whole record is error and folly, and that the present truth is only the error not yet found out. Such draw the moral of caring naught for all these things, or of flying to some external authority which will deliver once for all the fixed and unchangeable truth. But historic philosophy even in its aberrant forms has proved a factor in the valuation of experience, it has brought problems to light, it has provoked intellectual conflicts without which values are only nominal, even through its would-be absolutistic isolations it has secured recognition of mutual dependencies and reciprocal reinforcements. Yet if it can define its work more clearly, it can concentrate its energy upon its own characteristic problem—the genesis and functioning in experience of various typical interests and occupations with reference to one another.

III

THE ANTECEDENTS AND STIMULI OF THINKING

We have discriminated logic in its wider sense—concerned with the sequence of characteristic functions and attitudes in experience—from logic in its stricter meaning, concerned with the function of reflective thought. We must avoid yielding to the temptation of identifying logic with either of these to the exclusion of the other, or of supposing that it is possible to isolate one finally from the other. The more detailed treatment of the organs and methods of reflection cannot be carried on with security save as we have a correct idea of the position of reflection amid the typical functions of experience. Yet it is impossible to determine this larger placing, save as we have a defined and analytic, as distinct from a merely vague and gross, view of what we mean by reflection—what is its actual constitution. It is necessary to work back and forth between the larger and the narrower fields, transforming every increment upon one side into a method of work upon the other, and thereby testing it. The evident confusion of existing logical theory, its uncertainty as to its own bounds and limits, its tendency to oscillate from larger questions of the meaning of judgment and the validity

of inference over to details of scientific technique, and to translate distinctions of formal logic into acts in an investigatory or verificatory process, are indications of the need of this double movement

In the next three chapters it is proposed to take up some of the considerations that lie on the borderland between the larger and the narrower conceptions of logical theory. I shall discuss the *locus* of the function of thought in experience so far as such *locus* enables us to characterize some of the most fundamental distinctions, or divisions of labor, within the reflective process. In taking up the problem of the subject-matter of thought, I shall try to make clear that it assumes three quite distinct forms according to the epochal moment reached in control of experience. I shall attempt to show that we must consider subject-matter from the standpoint, first, of the *antecedents* or conditions that evoke thought, secondly, of the *datum* or *immediate material* presented to thought, and, thirdly, of the *proper objective* of thought. Of these three distinctions the first, that of antecedent and stimulus, clearly refers to the situation that is immediately prior to the thought-function as such. The second, that of datum or immediately given matter, refers to a distinction which is made within the thought-process as a part of and for the sake of its own *modus operandi*. It is a status in the scheme of thinking. The third, that of content or object, refers to the progress actually made in any

thought-function; material which is organized by inquiry so far as inquiry has fulfilled its purpose This chapter will get at the matter of preliminary conditions of thought indirectly rather than directly, by indicating the contradictory positions into which one of the most vigorous and acute of modern logicians, Lotze, has been forced through failing to define logical distinctions in terms of the history of readjustment and control of things in experience, and being thereby compelled to interpret certain notions as absolute instead of as historic and methodological

Before passing directly to the exposition and criticism of Lotze, it will be well, however, to take the matter in a somewhat freer way We cannot approach logical inquiry in a wholly direct and uncompromised manner Of necessity we bring to it certain distinctions—distinctions partly the outcome of concrete experience, partly due to the logical theory which has got embodied in ordinary language and in current intellectual habits, partly results of deliberate scientific and philosophic inquiry These more or less ready-made results are resources, they are the only weapons with which we can attack the new problem Yet they are full of unexamined assumptions, they commit us to all sorts of logically predetermined conclusions In one sense our study of the new subject-matter, let us say logical theory, is in truth only a review, a retesting and criticizing of

the intellectual standpoints and methods which we bring with us to the study

Nowadays everyone comes with certain distinctions already made between the subjective and the objective, between the physical and the mental, between the intellectual and the factual (1) We have learned to regard the region of emotional disturbance, of uncertainty and aspiration, as belonging peculiarly to ourselves, we have learned to set over against this the world of observation and of valid thought as something unaffected by our moods, hopes, fears, and opinions (2) We have also come to distinguish between what is immediately present in our experience and the past and the future, we contrast the realms of memory and anticipation with that of sense perception, more generally we contrast the given with the inferential (3) We are confirmed in a habit of distinguishing between what we call actual fact and our mental attitude toward that fact—the attitude of surmise or wonder or reflective investigation While one of the aims of logical theory is precisely to make us critically conscious of the significance and bearing of these various distinctions, to change them from ready-made assumptions into controlled conceptions, our mental habits are so set that they tend to have their own way with us, we read into logical theory conceptions that were formed before we had even dreamed of the logical undertaking which after all has for its business to assign to the terms in

question their proper meaning. Our conclusions are thus controlled by the very notions which need criticism and revision

We find in Lotze an unusually explicit inventory of these various preliminary distinctions, and an unusually serious effort to deal with the problems which arise from introducing them into the structure of logical theory (1) He expressly separates the matter of logical worth from that of psychological genesis. He consequently abstracts the subject-matter of logic as such wholly from the question of historic *locus* and *situs*. (2) He agrees with common-sense in holding that logical thought is reflective and thus presupposes a given material. He occupies himself with the nature of the antecedent conditions. (3) He wrestles with the problem of how a material formed prior to thought and irrespective of it can yet afford stuff upon which thought may exercise itself. (4) He expressly raises the question of how thought working independently and from without upon a foreign material can shape the latter into results which are valid—that is, objective.

If this discussion is successful, if Lotze can provide the intermediaries which span the gulf between the exercise of logical functions by thought upon a material wholly external to it, if he can show that the question of the origin of subject-matter of thought and of thought-activity is irrelevant to the question of its meaning and validity, we shall have to surrender

the position already taken. But if we find that Lotze's elaborations only elaborate the fundamental difficulty, presenting it now in this light and now in that, but always presenting the problem as if it were its own solution, we shall be confirmed in our idea of the need of considering logical questions from a different point of view. If we find that, whatever his formal treatment, he always, as a matter of fact, falls back upon some organized situation or function as the source of both the material and the process of inquiry, we shall have in so far an elucidation and even a corroboration of our theory.

We begin with the question of the material antecedents of thought—antecedents which condition reflection, and which call it out as reaction or response, by giving its cue. Lotze differs from many logicians of the same type in furnishing an explicit account of these antecedents.

1 The ultimate material antecedents of thought are found in impressions which are due to external objects as stimuli. Taken in themselves, these impressions are mere psychical states or events. They exist in us side by side, or one after the other, according as the objects which excite them operate simultaneously or successively. The occurrence of these various psychical states is not, however, entirely dependent upon the presence of the exciting thing. After a state has once been excited, it gets the power of reawakening other states which have

accompanied it or followed it. The associative mechanism of revival plays a part. If we had a complete knowledge of both the stimulating object and its effects, and of the details of the associative mechanism, we should be able from given data to predict the whole course of any given train or current of ideas (for the impressions as conjoined simultaneously or successively become ideas and a current of ideas)

Taken in itself, a sensation or impression is nothing but a "state of our consciousness, a mood of ourselves." Any given current of ideas is a necessary sequence of existences (just as necessary as any succession of material events), happening in some particular sensitive soul or organism. "Just because, under their respective conditions, every such series of ideas hangs together by the same necessity and law as every other, there would be no ground for making any such distinction of value as that between truth and untruth, thus placing one group in opposition to all the others."

2 Thus far, as the last quotation clearly indicates, there is no question of reflective thought, and hence no question of logical theory. But further examination reveals a peculiar property of the current of ideas. Some ideas are merely coincident, while others may

¹ Lotze, *Logic* (translation, Oxford, 1888), I, 2. For the preceding exposition see I, 1, 2, 13, 14, 37, 38, also *Microkosmos*, Book V, chap. iv.

be termed coherent. That is to say, the exciting causes of some of our simultaneous and successive ideas really belong together, while in other cases they simply happen to act at the same time, without there being a real connection between them. By the associative mechanism, however, both the coherent and the merely coincident combinations recur. The first type of recurrence supplies positive material for knowledge, the second gives occasion for error.

3 It is a peculiar mixture of the coincident and the coherent which sets the peculiar problem of reflective thought. The business of thought is to recover and confirm the coherent, the really connected, adding to its reinstatement an accessory justifying notion of the real ground of coherence, while it eliminates the coincident as such. While the mere current of ideas is something which just happens within us, the process of elimination and of confirmation by means of statement of real ground and basis of connection is an activity which mind, as such, exercises. This distinction marks off thought as activity from any psychical event and from the associative mechanism as mere happenings. One is concerned with mere *de facto* coexistences and sequences, the other with the cognitive *worth* of these combinations.¹

Consideration of the peculiar work of thought in going over, sorting out, and determining various ideas

¹ Lotze, *Logic*, I, 6, 7

according to a standard of value will occupy us in our next chapter. Here we are concerned with the material antecedents of thought as they are described by Lotze. At first glance, he seems to propound a satisfactory theory. He avoids the extravagancies of transcendental logic, which assumes that all the matter of experience is determined from the very start by rational thought, and he also avoids the pitfall of purely empirical logic, which makes no distinction between the mere occurrence and association of ideas and the real worth and validity of the various conjunctions thus produced. He allows unreflective experience, defined in terms of sensations and their combinations, to provide material conditions for thinking, while he reserves for thought a distinctive work and dignity of its own. Sense experience furnishes the antecedents, thought has to introduce and develop systematic connection—rationality.

A further analysis of Lotze's treatment may, however, lead us to believe that his statement is riddled through and through with inconsistencies and self-contradictions, that, indeed, any one part of it can be maintained only by the denial of some other portion.

1 The impression is the ultimate antecedent in its purest or crudest form (according to the angle from which one views it). It is that which has never felt, for good or for bad, the influence of thought

Combined into ideas, these impressions stimulate or arouse the activities of thought, which are forthwith directed upon them. As the recipient of the activity which they have excited and brought to bear upon themselves, they furnish also the material content of thought—its actual stuff. As Lotze says over and over again: "It is the relations themselves already subsisting between impressions, when we become conscious of them, by which the action of thought which is never anything but reaction, is attracted, and this action consists merely in interpreting relations which we find existing between our passive impressions into aspects of the matter of impressions."¹ And again: "Thought can make no difference where it finds none already in the matter of the impressions."² And again: "The possibility and the success of thought's procedure depends upon this original constitution and organization of the whole world of ideas, a constitution which, though not necessary in thought, is all the more necessary to make thinking possible."³

The impressions and ideas thus play a versatile rôle, they now assume the part of ultimate antecedents and provocative conditions, of crude material, and somehow, when arranged, of content for thought. This very versatility awakens suspicion.

While the impression is merely subjective and a bare state of our own consciousness, yet it is deter-

¹ Lotze, *Logic* (translation, Oxford, 1888), I, 25

² *Ibid.*, 36

³ *Ibid.*

mined, both as to its existence and as to its relation to other similar existences, by external objects as stimuli, if not as causes. It is also determined by a psychical mechanism so thoroughly objective or regular in its workings as to give the same necessary character to the current of ideas that is possessed by any physical sequence. Thus that which is "nothing but a state of our consciousness" turns out straightway to be a specifically determined objective fact in a system of facts.

That this absolute transformation is a contradiction is no clearer than that just such a contradiction is indispensable to Lotze. If impressions were nothing but states of consciousness, moods of ourselves, bare psychical existences, it is sure enough that we should never even know them to be such, to say nothing of conserving them as adequate conditions and material for thought. It is only by treating them as real facts in a real world, and only by carrying over into them, in some assumed and unexplained way, the capacity of representing the cosmic facts which cause them, that impressions or ideas come in any sense within the scope of thought. But if the antecedents are really impressions-in-their-objective-setting, then Lotze's whole way of distinguishing thought-worth from *mere* existence or event without objective significance must be radically modified.

The implication that impressions have actually a quality or meaning of their own becomes explicit

when we refer to Lotze's theory that the immediate antecedent of thought is found in the *matter* of ideas. When thought is said to "take cognizance of *relations* which its own activity does not originate, but which have been prepared for it by the unconscious mechanism of the psychic states,"¹ the attribution of objective content, of reference and meaning to ideas, is unambiguous. The idea forms a most convenient half-way house for Lotze. On one hand, as absolutely prior to thought, as material antecedent condition, it is merely psychical, bald subjective event. But as subject-matter for thought, as antecedent which affords stuff for thought's exercise, it characteristically qualifies content.

Although we have been told that the impression is a mere receptive irritation without participation of mental activity, we are not surprised, in view of this capacity of ideas, to learn that the mind actually has a determining share in both the reception of stimuli and in their further associative combinations. The subject always enters into the presentation of any mental object, even the sensational, to say nothing of the perceptive and the imaged. The perception of a given state of things is possible only on the assumption that "the perceiving subject is at once enabled and compelled by its own nature to combine the excitations which reach it from objects into those forms which it is to perceive in the objects,

¹ *Microkosmos*, Book V, chap. iv.

and which it supposes itself simply to *receive* from them"¹

It is only by continual transition from impression and ideas as mental states and events to ideas as logical *objects or contents*, that Lotze bridges the gulf from bare exciting antecedent to concrete material conditions of thought. This contradiction, again, is necessary to Lotze's standpoint. To set out frankly with objects as antecedents would demand reconsideration of the whole viewpoint, which supposes that the difference between the logical and its antecedent is a matter of the difference between *worth* and mere *existence or occurrence*. It would indicate that since meaning or value is already there, the task of thought must be that of the transformation or *reconstruction of meaning* through an intermediary process. On the other hand, to stick by the standpoint of *mere existence* is not to get anything which can be called even antecedent of thought.

2 Why is there a task of transformation? Consideration of the material in its function of evoking thought, giving it its cue, will serve to complete the picture of the contradiction and of the real facts. It is the conflict between ideas as merely coincident and ideas as coherent which constitutes the need that provokes the response of thought. Here Lotze vibrates (*a*) between considering both coincidence and coherence as psychical events, (*b*) considering

¹ *Logic*, II, 235, see the whole discussion, §§ 325-327

coincidence as purely psychical and coherence as at least quasi-logical, and (c) making them both determinations within the sphere of reflective thought. In strict accordance with his own premises, coincidence and coherence ought both to be mere peculiarities of the current of ideas as events within ourselves. But so taken the distinction becomes absolutely meaningless. Events do not cohere, at the most certain sets of them happen more or less frequently than other sets, the only intelligible difference is one of frequency of coincidence. And even this attributes to an event the supernatural trait of reappearing after it has disappeared. Even coincidence has to be defined in terms of relation of the *objects* which are supposed to excite the psychical events that happen together.

As recent psychological discussion has made clear enough, it is the matter, meaning, or content of ideas that is associated, not the ideas as states or existences. Take such an idea as sun-revolving-about-earth. We may say it means the conjunction of various sense impressions, but it is connection, or mutual reference, of *attributes* that we have in mind in the assertion. It is absolutely certain that our psychical image of the sun is not psychically engaged in revolving about our psychical image of the earth. It would be amusing if such were the case, theaters and all dramatic representations would be at a discount. But in truth, sun-revolving-about-earth is a single meaning

or intellectual object, it is a unified subject-matter within which certain distinctions of reference appear. It is concerned with what we intend when we think earth and sun, and think them in their relation to each other. It is a rule, specification, or direction of how to think when we have occasion to think a certain subject-matter. To treat this mutual reference as if it were simply a case of conjunction of mental events produced by psycho-physical irritation and association is a profound case of the psychological fallacy. We may, indeed, analyze an experience involving belief in an object of a certain kind and find that it had its origin in certain conditions of the sensitive organism, in certain peculiarities of perception and of association, and hence conclude that the belief involved in it was not justified by the facts themselves. But the significance of the belief in sun-revolving-about-earth by those who held it, consisted precisely in the fact that it was taken not as a mere association of feelings, but as a definite portion of the whole structure of objective experience, guaranteed by other parts of the fabric, and lending its support and giving its tone to them. It was to them part of the experienced frame of things—of the real world.

Put the other way, if such an instance meant a mere conjunction of psychical states, there would be in it absolutely nothing to evoke thought. Each idea as event, as Lotze himself points out (I, 2), may be regarded as adequately and necessarily determined

to the place it occupies. There is absolutely no question on the side of events of mere coincidence *versus* genuine connection. As event, it is there and it belongs there. We cannot treat something as at once a bare fact of existence and a problematic subject-matter of logical inquiry. To take the reflective point of view is to consider the matter in a totally new light, as Lotze says, it is to raise the question of rightful claims to a position or relation.

The point becomes clearer when we contrast coincidence with connection. To consider coincidence as simply psychical, and coherence as at least quasi-logical, is to put the two on such different bases that no question of contrasting them can arise. The coincidence which precedes a valid or grounded coherence (the conjunction which as coexistence of objects and sequence of acts is perfectly adequate) never is, as antecedent, the coincidence which is set over against coherence. The side-by-sideness of books on my bookshelf, the succession of noises that rise through my window, do not trouble me logically. They do not appear as errors or even as problems. One coexistence is just as good as any other until some new point of view, or new end, presents itself. If it is a question of the convenience of arrangement of books, then the value of their present collocation becomes a problem. Then I contrast their present state as bare conjunction over against another scheme as one which is coherent. If I regard the sequence

of noises as a case of articulate speech, their order becomes important—it is a problem to be determined. The inquiry whether a given combination presents apparent or real connection shows that reflective inquiry is already going on. Does this phase of the moon really mean rain, or does it just happen that the rain-storm comes when the moon has reached this phase? To ask such questions shows that a certain portion of the universe of objective experience is subjected to critical analysis for purposes of definitive restatement. The tendency to regard some combination as mere coincidence is absolutely a *part* of the movement of mind in its search for the real connection.

If coexistence as such is to be set against coherence as such, as the non-logical against the logical, then, since our whole spatial universe is one of collocation, and since thought in this universe can never get farther than substituting one collocation for another, the whole realm of space-experience is condemned offhand and in perpetuity to anti-rationality. But, in truth, coincidence as over against coherence, conjunction as over against connection, is just *suspected* coherence, one which is under the fire of active inquiry. The distinction is one which arises only within the logical or reflective function.

3 This brings us explicitly to the fact that there is neither coincidence nor coherence in terms of the elements or meanings contained in any couple or pair

of ideas taken by itself. It is only when they are co-factors in a situation or function which includes more than either the "coincident" or the "coherent" and more than the arithmetical sum of the two, that thought's activity can be evoked. Lotze is continually in this dilemma. Thought either shapes its own material or else just accepts it. In the first case (since Lotze cannot rid himself of the presumption that thought must have a fixed ready-made antecedent) its activity can only alter this stuff and thus lead the mind farther away from reality. But if thought just accepts its material, how can there be any distinctive aim or activity of thought at all? As we have seen, Lotze endeavors to escape this dilemma by supposing that, while thought receives its material yet checks it up, it eliminates certain portions of it and reinstates others, plus the stamp and seal of its own validity.

Lotze objects most strenuously to the Kantian notion that thought awaits its subject-matter with certain ready-made modes of apprehension. This notion would raise the insoluble question of how thought contrives to bring the matter of each impression under that particular form which is appropriate to it (I. 24). But he has not avoided the difficulty. How does thought know which of the combinations are merely coincident and which are merely coherent? How does it know which to eliminate as irrelevant and which to confirm as grounded? Either this

evaluation is an imposition of its own, or else gets its cue and clue from the subject-matter. Now, if the coincident and the coherent taken in and of themselves are competent to give this direction, they are already labeled. The further work of thought is one of super-erogation. It has at most barely to note and seal the material combinations that are already there. Such a view clearly renders thought's work as unnecessary in form as it is futile in force.

But there is no alternative except to recognize that an entire situation or environment, within which exist both that which is afterward found to be mere coincidence and that found to be real connection, actually provokes thought. It is only as an experience previously accepted comes up in its wholeness against another one equally integral, and only as some larger experience dawns which requires each as a part of itself and yet within which the required factors show themselves mutually incompatible, that thought arises. It is not bare coincidence, or bare connection, or bare addition of one to the other, that excites thought. The stimulus is a situation which is organized or constituted as a whole, and yet which is falling to pieces in its parts—a situation which is in conflict within itself—that arouses the search to find what really goes together, and a correspondent effort to shut out what only seemingly goes together. And real coherence means precisely capacity to exist within the comprehending whole. To read back into

the preliminary situation those distinctions of mere conjunction of material and of valid coherence which get existence, to say nothing of fixation, only within the process of inquiry is a fallacy

We must not leave this phase of the discussion, however, until it is quite clear that our objection is not to Lotze's position that reflective thought arises from an antecedent which is not reflectional in character, nor yet to his idea that this antecedent has a certain structure and content of its own setting the peculiar problem of thought, giving the cue to its specific activities and determining its object. On the contrary, it is this latter point upon which we would insist; so as (by insisting) to point out, negatively, that this view is absolutely inconsistent with Lotze's theory that psychical impressions and ideas are the true antecedents of thought, and, positively, to show that it is the *situation as a whole*, and not any one isolated part of it, or distinction within it, that calls forth and directs thinking. We must beware the fallacy of assuming that some one element in the prior situation in isolation or detachment induces the reflection which in reality comes forth only from the whole disturbed situation. On the negative side, characterizations of impression and idea are distinctions which arise only within reflection upon that situation which is the genuine antecedent of thought. Positively, it is the whole dynamic experience with its qualitative and pervasive continuity, and its

inner active distraction, its elements at odds with each other, in tension against each other, each contending for its proper placing and relationship, which generates the thought-situation.

From this point of view, at this period of development, the distinctions of objective and subjective have a characteristic meaning. The antecedent, to repeat, is a situation in which the various factors are actively incompatible with each other, and yet in and through the striving tend to a re-formation of the whole and to a restatement of the parts. This situation as such is clearly 'objective'. It is there, it is there as a whole, the various parts are there, and their active incompatibility with one another is there. Nothing is conveyed at this point by asserting that any particular part of the situation is illusory or subjective, or mere appearance, or that any other is truly real. The experience exists as one of vital and active confusion and conflict among its elements. The conflict is not only objective in a *de facto* sense (that is, really existent), but is objective in a logical sense as well, it is just this conflict which effects a transition into the thought-situation—this, in turn, being only a constant movement toward a defined equilibrium. The conflict has objective worth because it is the antecedent condition and cue of thought. Deny an organization of things within which competing incompatible tendencies appear and thinking becomes merely "mental."

Every reflective attitude and function, whether of naive life, deliberate invention, or controlled scientific research, has risen through the medium of some such total objective situation. The abstract logician may tell us that sensations or impressions, or associated ideas, or bare physical things, or conventional symbols, are antecedent conditions. But such statements cannot be verified by reference to a single instance of thought in connection with actual practice or actual scientific research. Of course, by extreme mediation symbols may become conditions of evoking thought. They get to be objects in an active experience. But they are stimuli to thinking only in case their manipulation to form a new whole occasions resistance, and thus reciprocal tension. Symbols and their definitions develop to a point where dealing with them becomes itself an experience, having its own identity, just as the handling of commercial commodities, or arrangement of parts of an invention, is a specific experience.

There is always as antecedent to thought an experience of subject-matter of the physical or social world, or the previously organized intellectual world, whose parts are actively at war with each other—so much so that they threaten to disrupt the situation, which accordingly for its own maintenance requires deliberate redefinition and re-relation of its tensional parts. This redefining and re-relating is the constructive process termed thinking: the reconstructive situation,

with its parts in tension and in such movement toward each other as tends to a unified arrangement of things, is the thought-situation

This at once suggests the subjective phase. The situation, the experience as such, is objective. There is an experience of the confused and conflicting tendencies. But just *what in particular* is objective, just *what* form the situation shall take as an organized harmonious whole, is unknown, that is the problem. It is the uncertainty as to the *what* of the experience together with the certainty *that* there is such an experience, that evokes the thought-function. Viewed from this standpoint of uncertainty, the situation as a whole is subjective. No particular content or reference can be asserted offhand. Definite assertion is expressly reserved—it is to be the outcome of the procedure of reflective inquiry now undertaken. This holding off of contents from definitely asserted position, this viewing them as candidates for reform, is what we mean, at this stage of the natural history of thought, by the subjective.

We have followed Lotze through his tortuous course of inconsistencies. It is better, perhaps, to run the risk of vain repetition than that of leaving the impression that these are *mere* dialectical contradictions. It is an idle task to expose contradictions unless we realize them in relation to the fundamental assumption which breeds them. Lotze is bound to differentiate thought from its antecedents. He is intent

upon doing this, however, through a preconception that marks off the thought-situation radically from its predecessor, through a difference that is complete, fixed and absolute, or at large. It is a total contrast of thought as such to something else as such that he requires, not a contrast within experience of one temporal phase of a process, one period of a rhythm, from others.

This complete and rigid difference Lotze finds in the difference between an experience which is *mere existence* or occurrence, and one which has to do with worth, truth, right relationship. Now things have connection, organization, value or force, practical and aesthetic meaning, on their own account. The same is true of deeds, affections, etc. Only states of feelings, bare impressions, etc., seem to fulfil the prerequisite of being given as existence, and yet without qualification as to worth, etc. Then the current of ideas offers itself, a ready-made stream of events, of existences, which can be characterized as wholly innocent of reflective determination, and as the natural predecessor of thought.

But this stream of existences is no sooner regarded than its total incapacity to officiate as material condition and cue of thought appears. It is about as relevant to thinking as are changes that may be happening on the other side of the moon. So, one by one, the whole series of determinations of force and worth already traced are introduced *into* the very

make-up, the inner structure, of what was to be *mere* existence viz, (1) things of whose spatial and temporal relations the mere impressions are somehow *representative*, (2) *meaning*—the idea as significant, possessed of quality, and not a mere event, (3) distinguished traits of coincidence and coherence within the stream All these features are explicitly asserted, as we have seen, underlying and running through them all is the recognition of the supreme value of a situation which has been organized as a whole, yet is now conflicting in its inner constitution

These contradictions all arise in the attempt to put thought's work, as concerned with objective validity, over against experience as a mere antecedent happening, or occurrence This contrast arises because of the attempt to consider thought as an independent somewhat in general which nevertheless, in *our* experience, is dependent upon a raw material of mere impressions given to it Hence the sole radical avoidance of the contradictions can be secured only when thinking is seen to be a specific event in the movement of experienced things, having its own specific occasion or demand, and its own specific place

The nature of the organization and force that the antecedent conditions of the thought-function possess is too large a question here to enter upon in detail Lotze himself suggests the answer He speaks of the current of ideas, just as a current, supplying us

with the "mass of well-grounded information which *regulates daily life*" (I, 4) It gives rise to "useful combinations," "correct expectations," "seasonable reactions" (I, 7) He speaks of it, indeed, as if it were just the ordinary world of naïve experience, the so-called empirical world, as distinct from the world as critically revised and rationalized in scientific and philosophic inquiry The contradiction between this interpretation and that of a mere stream of psychical impressions is only another instance of the difficulty already discussed But the phraseology suggests the real state of things The unreflective world is a world of practical things, of ends and means, of their effective adaptations, of control and regulation of conduct in view of results The world of uncritical experience also is a world of social aims and means, involving at every turn the goods and objects of affection and attachment, of competition and co-operation It has incorporate also in its own being the surprise of aesthetic values—the sudden joy of light, the gracious wonder of tone and form

I do not mean that this holds in gross of the unreflective world of experience over against the critical thought-situation—such a contrast implies the very wholesale, at large, consideration of thought which I am striving to avoid Doubtless many and many an act of thought has intervened in effecting the organization of our commonest practical-affectional-aesthetic environment I only mean to indicate that thought

does take place *in* such a world, not *after* a world of bare existences, and that while the more systematic reflection we call organized science may, in some fair sense, be said to come *after*, it comes after affectional, artistic, and technological interests which have found realization

Having entered so far upon a suggestion which cannot be followed out, I venture one other digression. The notion that value or significance as distinct from mere existentiality is the product of thought or reason, and that the source of Lotze's contradictions lies in the effort to find *any* situation prior or antecedent to thought, is a familiar one—it is even possible that my criticisms of Lotze have been interpreted by some readers in this sense.¹ This is the position frequently called neo-Hegelian (though, I think, with questionable accuracy), and has been developed by many writers in criticizing Kant. This position and that

¹ We have a most acute and valuable criticism of Lotze from this point of view in Professor Henry Jones, *Philosophy of Lotze*, 1895. My specific criticisms agree in the main with his, and I am glad to acknowledge my indebtedness. But I cannot agree in the belief that the business of thought is to qualify reality as such, its occupation appears to me to be determining the reconstruction of some aspect or portion of reality, and to fall within the course of reality itself, being, indeed, the characteristic medium of its activity. And I cannot agree that reality as such, with increasing fulness of knowledge, presents itself as a thought-system, though, as just indicated, I have no doubt that practical existence presents itself in its temporal course as thought-specifications, just as it does as affectional and aesthetic and the rest of them.

taken in this chapter do indeed agree in certain general regards. They are at one in denial of the factuality and the possibility of developing fruitful reflection out of antecedent bare existence or mere events. They unite in denying that there is or can be any such thing as *mere* existence—phenomenon unqualified as respects organization and force, whether such phenomenon be psychic or cosmic. They agree that reflective thought grows organically out of an experience which is already organized, and that it functions within such an organism. But they part company when a fundamental question is raised. Is all organized meaning the work of thought? Does it therefore follow that the organization out of which reflective thought grows is the work of thought of some other type—of Pure Thought, Creative or Constitutive Thought, Intuitive Reason, etc.? I shall indicate briefly the reasons for divergence at this point.

To cover all the practical-social-aesthetic objects involved, the term "thought" has to be so stretched that the situation might as well be called by any other name that describes a typical form of experience. More specifically, when the difference is minimized between the organized and arranged scheme out of which reflective inquiry proceeds, and reflective inquiry itself (and there can be no other reason for insisting that the antecedent of reflective thought is itself somehow thought), exactly the same type of

problem recurs which presents itself when the distinction is exaggerated into one between bare existences and rational coherent meanings

For the more one insists that the antecedent situation is constituted by thought, the more one has to wonder why another type of thought is required, what need arouses it, and how it is possible for it to improve upon the work of previous constitutive thought. This difficulty at once forces idealists from a logic of experience as it is concretely experienced into a metaphysic of a purely hypothetical experience. Constitutive thought precedes *our* conscious thought-operations, hence it must be the working of some absolute universal thought which, unconsciously to our reflection, builds up an organized world. But this recourse only deepens the difficulty. How does it happen that the absolute constitutive and intuitive Thought does such a poor and bungling job that it requires a finite discursive activity to patch up its products? Here more metaphysic is called for. The Absolute Reason is now supposed to work under limiting conditions of finitude, of a sensitive and temporal organism. The antecedents of reflective thought are not, therefore, determinations of thought pure and undefiled, but of what thought can do when it stoops to assume the yoke of change and of feeling. I pass by the metaphysical problem left unsolved by this flight. Why and how should a perfect, absolute, complete, finished thought find it necessary to submit

to alien, disturbing, and corrupting conditions in order, in the end, to recover through reflective thought in a partial, piecemeal, wholly inadequate way what it possessed at the outset in a much more satisfactory way?

I confine myself to the logical difficulty. How can thought relate itself to the fragmentary sensations, impressions, feelings, which, in their contrast with and disparity from the workings of constitutive thought, mark it off from the latter, and which in their connection with its products give the cue to reflective thinking? *Here we have again exactly the problem with which Lotze has been wrestling* we have the same insoluble question of the reference of thought-activity to a wholly indeterminate unrationalyzed, independent, prior existence. The absolute idealist who takes up the problem at this point will find himself forced into the same continuous seesaw, the same scheme of alternate rude robbery and gratuitous gift, that Lotze engaged in. The simple fact is that here *is* just where Lotze began, he saw that previous transcendental logicians had left untouched the specific question of relation of *our* supposedly finite, reflective thought to its own antecedents, and he set out to make good the defect. If reflective thought is required because constitutive thought works under externally limiting conditions of sense, then we have some elements which are, after all, mere existences, events, etc. Or, if they have

organization from some other source than thought, and induce reflective thought not as bare impressions, etc., but through their place in some whole, then we have admitted the possibility of organization in experience, apart from Reason, and the ground for assuming Pure Constitutive Thought is abandoned.

The contradiction appears equally when viewed from the side of thought-activity and its characteristic forms. All our knowledge, after all, of thought as constitutive is gained by consideration of the operations of reflective thought. The perfect system of thought is so perfect that it is a luminous, harmonious whole, without definite parts or distinctions—or, if there are such, it is only reflection that brings them out. The categories and methods of constitutive thought itself must therefore be characterized in terms of the *modus operandi* of reflective thought. Yet the latter takes place just because of the peculiar problem of the peculiar conditions under which it arises. Its work is progressive, reformatory, reconstructive, synthetic, in the terminology made familiar by Kant. We are not only *not* justified, accordingly, in transferring its determinations over to “constitutive” thought, but are prohibited from attempting any such transfer. To identify logical processes, states, devices, results which are conditioned upon the primary fact of resistance to thought as constitutive with the structure of constitutive thought is as complete an instance of the fallacy of recourse

from one genus to another as could well be found. Constitutive and reflective thought are, first, defined in terms of their dissimilarity and even opposition, and then without more ado the forms of the description of the latter are carried over bodily to the former!

This is not a merely controversial criticism. It points positively toward the fundamental thesis of these chapters. All the distinctions discovered within thinking, of conception as over against sense perception, of various modes and forms of judgment, of inference in its vast diversity of operation—all these distinctions come within the thought-situation as growing out of a characteristic antecedent typical formation of experience, and have for their purpose the solution of the peculiar problem with respect to which the thought-function is generated or evolved—the restoration of a deliberately integrated experience from the inherent conflict into which it has fallen.

The failure of transcendental logic has the same origin as the failure of the empiristic (whether taken pure or in the mixed form in which Lotze presents it). It makes into absolute and fixed distinctions of existence and meaning, and of one kind of meaning and another kind, things which are historic or temporal in their origin and their significance. It views thought as attempting to represent or state reality once for all, instead of trying to determine some phases or contents of it with reference to their more effective and significant employ—instead of as recon-

structive The rock against which every such logic splits is that either existence already has the statement which thought is endeavoring to give it, or else it has not In the former case, thought is futilely reiterative, in the latter, it is falsificatory

The significance of Lotze for critical purposes is that his peculiar effort to combine a transcendental view of thought (i e , of Thought as active in forms of its own, pure in and of themselves) with certain obvious facts of the dependence of our thought upon specific empirical antecedents, brings to light fundamental defects in both the empiristic and the transcendental logics We discover a common failure in both the failure to view logical terms and distinctions with respect to their necessary function in the redintegration of experience

IV

DATA AND MEANINGS

We have reached the point of conflict in the matters of an experience. It is *in* this conflict and because of it that the matters, or significant quales, stand out *as* matters. As long as the sun revolves about earth without question, this "content" is not in any way abstracted. Its distinction from the form or mode of experience as its matter is the work of reflection. The same conflict makes other experiences assume discriminated objectification, they, too, cease to be ways of living, and become distinct objects of observation and consideration. The movements of planets, eclipses, etc., are cases in point.¹ The maintenance of a unified experience has become a problem, an end, for it is no longer secure. But this involves such restatement of the conflicting elements as will enable them to take a place somewhere in the world of the

¹ This is but to say that the presentation of objects as specifically different things in experience is the work of reflection, and that the discrimination of something experienced from modes of experiencing is *also* the work of reflection. The latter statement is, of course, but a particular case of the first, for an act of experiencing is one object, among others, which may be discriminated out of the original experience. When so discriminated, it has exactly the same existential status as any other discriminated object, seeing and thing seen stand on the same level of existentiality. But primary experience is innocent of the discrimination of the *what* experienced and the *how*,

new experience, they must be disposed of somehow, and they can be disposed of finally only as they are provided for. That is, they cannot be simply denied or excluded or eliminated, they must be taken into the fold. But such introduction clearly demands more or less modification or transformation on their part. The thought-situation is the deliberate maintenance of an organization in experience, with a critical consideration of the claims of the various conflicting contents to a place, and a final assignment of position.

The conflicting situation inevitably polarizes or dichotomizes itself. There is somewhat which is untouched in the contention of incompatibles. There is something which remains secure, unquestioned. On the other hand, there are elements which are doubtful and precarious. This gives the framework of the general distribution of the field into "facts," the given, the presented, the Datum; and ideas, the *Quaesitum*, the conceived, the Inferential.

a) There is always something unquestioned in any problematic situation at any stage of its process,¹

or mode, of experiencing. We are not in it aware of the seeing, nor yet of objects as something seen. Any experience in all of its non-reflective phases is innocent of any discrimination of subject and object. It involves within itself what may be reflectively discriminated into objects located outside the organism and objects referred to the organism. [Note added in revision.]

¹ Of course, this very element may be the precarious, the ideal, and possibly fanciful of some other situation. But it is to change the

even if it be only the fact of conflict or tension. For this is never *mere* tension at large. It is thoroughly qualified, or characteristically toned and colored, by the particular elements which are in strife. Hence it is *this* conflict, unique and irreplaceable. That it comes now means precisely that it has never come before, that it is now passed in review and some sort of a settlement reached, means that just *this* conflict will never recur. In a word, the conflict is immediately of just this and no other sort, and this immediately given quality is an irreducible datum. *It* is fact, even if all else be *doubtful*. As it is subjected to examination, it loses vagueness and assumes more definite form.

Only in very extreme cases, however, does the assured, unquestioned element reduce to terms as low as we have here imagined. Certain things come to stand forth as facts, no matter what else may be doubted. There are certain *apparent* diurnal changes of the sun, there is a certain annual course or track. There are certain nocturnal changes in the planets, and certain seasonal rhythmic paths. The significance of these may be doubted. Do they *mean* real change in the sun or in the earth? But change, and change of a certain definite and numerically determinate

historic into the absolute to conclude that therefore everything is uncertain, all at once, or as such. This gives metaphysical skepticism as distinct from the working skepticism which is an inherent factor in all reflection and scientific inquiry.

character, is there It is clear that such out-standing facts (ex-istences) constitute the data, the given or presented, in the thought-function

b) It is obvious that this is only one correspondent, or status, in the total situation With the consciousness of *this* as certain, as given to be reckoned with, goes the consciousness of uncertainty as to *what it means*—of how it is to be understood or interpreted, that is, of its reference and connection The facts *qua* presentations or existences are sure, *qua* meanings (position and relationship in an experience yet to be secured) they are doubtful Yet doubt does not preclude memory or anticipation Indeed, it is possible only through them The memory of past experience makes sun-revolving-about-earth an object of attentive regard The recollection of certain other experiences suggests the idea of earth-rotating-daily-on-axis and revolving-annually-about-sun These contents are as much present as is the observation of change, but as respects connection they are only possibilities Accordingly, they are categorized or disposed of as ideas, meanings, thoughts, ways of conceiving, comprehending, interpreting facts

Correspondence of reference here is as obvious as correlation of existence In the logical process, the datum is not just external existence, and the idea mere psychical existence Both are modes of existence—one of *given* existence, the other of *possible*, of inferred existence And if the latter is regarded, from

the standpoint of the unified experience aimed at, as having only *possible* existence, the datum also is regarded as incomplete and unassured. Or, as we commonly put it, while the ideas are impressions, suggestions, guesses, theories, estimates, etc., facts are crude, raw, unorganized, brute. They lack relationship, that is, assured place, they are deficient as to continuity. Mere change of relative position of sun, which is absolutely unquestioned as datum, is a sheer abstraction from the standpoint either of the organized experience left behind, or of the reorganized experience which is the end—the objective. It is impossible as a persistent object. In other words, datum and ideatum are divisions of labor, co-operative instrumentalities, for economical dealing with the problem of the maintenance of the integrity of experience.

Once more, and briefly, both datum and ideatum may (and positively, veritably, do) break up, each for itself, into physical and mental. In so far as the conviction gains ground that the earth revolves about the sun, the old fact is broken up into a new cosmic existence, and a new psychological condition—the recognition of a process in virtue of which movements of smaller bodies in relation to very remote larger bodies are interpreted in a reverse sense. We do not just eliminate the source of error in the old content. We reinterpret it as valid in its own place, viz., a case of the psychology of perception, although

invalid as a matter of cosmic structure. Until we have detected the source of error as itself a perfectly genuine existence, we are not, scientifically, satisfied. If we decide that the snake is but a hallucination, our reflection is not, in purport, complete until we have found some fact just as existential as the snake would have been had it been there, which accounts for the hallucination. We never stop, except temporarily, with a reference to the mind or knower as source of an error. We hunt for a specific existence. In other words, with increasing accuracy of determination of the given, there comes a distinction, for methodological purposes, between the *quality* or matter of the sense experience and its *form*—the sense perceiving, as itself a psychological fact, having its own place and laws or relations. Moreover, the old experience, that of sun-revolving, abides. But it is regarded as belonging to "me"—to this experiencing individual rather than to the cosmic world.

Here, then, *within* the growth of the thought-situation and as a part of the process of determining *specific* truth under *specific* conditions, we get for the first time the clue to that distinction with which, as ready-made and prior to all thinking, Lotze started out, namely, the separation of the matter of impression from impression as a personal event. The separation which, taken at large, engenders an insoluble problem, appears within a particular reflective inquiry, as an inevitable differentiation of a scheme of existence.

The same sort of thing occurs on the side of thought, or meaning. The meaning or idea which is growing in acceptance, which is gaining ground as meaning-of-datum, gets logical or intellectual or objective force, that which is losing standing, which is increasingly doubtful, gets qualified as just a notion, a fancy, a prejudice, misconception—or finally just an error, a mental slip.

Evaluated as fanciful in *validity* it becomes a mere fancy in its existence.¹ It is not eliminated, but receives a new reference or meaning. Thus the distinction between subjectivity and objectivity is not one between meaning as such and datum as such. It is a specification that emerges, correspondently, in *both* datum and ideatum. That which is left behind in the evolution of accepted meaning is still characterized as real, but real now in relation only to a way of experiencing—to a peculiarity of the organism. That which is moved toward is regarded as real in a cosmic or extra-organic sense.

1 *The data of thought* —When we turn to Lotze, we find that he makes a clear distinction between the presented material of thought, its datum, and the typical characteristic modes of thinking in virtue of which the datum gets organization or system. It is

¹ But this is a slow progress within reflection. Plato, who was influential in bringing this general distinction to consciousness, still thought and wrote as if "image" were itself a queer sort of objective existence, it was only gradually that it was disposed of as a phase of personal experiencing.

interesting to note also that he states the datum in terms different from those in which the antecedents of thought are defined. From the point of view of the data or material upon which ideas exercise themselves, it is not coincidence, collocation, or succession that counts, but gradation of degrees in a scale. It is not things in spatial or temporal arrangement that are emphasized, but qualities as mutually distinguished, yet resembling and classed. There is no inherent inconceivability in the idea that every impression should be as incomparably different from every other as sweet is from warm. But by a remarkable circumstance such is not the case. We have series, and networks of series. We have diversity of a common—diverse colors, sounds, smells, tastes, etc. In other words, the data are sense qualities which, fortunately for thought, are given arranged as shades, degrees, variations, or qualities of somewhat that is identical.¹

All this is given, presented, to our ideational activities. Even the universal, the common color which runs through the various qualities of blue, green, white, etc., is not a product of thought, but something which thought finds already in existence. It conditions comparison and reciprocal distinction. Particularly all mathematical determinations, whether of counting (number), degree (more or less), and quantity (greatness and smallness), come back to

¹ I, 28-34

this peculiarity of the datum Here Lotze dwells at considerable length upon the fact that the very possibility, as well as the success, of thought is due to this peculiar universalization or *prima facie* ordering with which its material is given to it Such pre-established fitness in the meeting of two things that have nothing to do with each other is certainly cause enough for wonder and congratulation

It should not be difficult to see why Lotze uses different categories in describing the material of thought from those employed in describing its antecedent conditions, even though, according to him, the two are absolutely the same¹ He has different *functions* in mind In one case, the material must be characterized as evoking, as incentive, as stimulus—from this point of view the peculiar feature of spatial and temporal arrangement in contrast with

¹ It is interesting to see how explicitly Lotze is compelled finally to differentiate two aspects in the antecedents of thoughts, one of which is necessary in order that there may be anything to call out thought (a lack, or problem), the other in order that when thought is evoked it may find data at hand—that is, material in shape to receive and respond to its exercise “The manifold matter of ideas is brought before us, not only in the *systematic order of its qualitative relationships*, but in the rich *variety of local and temporal combinations*

The *combinations of heterogeneous ideas* form the *problems*, in connection with which the efforts of thought to reduce coexistence to coherence will *subsequently* be made The *homogeneous or similar* ideas, on the other hand, give occasion to separate, to connect, and to count their repetitions” (I, 33, 34, italics mine) Without the heterogeneous variety of the local and temporal juxta-

coherence or connection is emphasized. But in the other case the material must be characterized as affording stuff, actual subject-matter. Data are not only what is given *to* thought, but they are also the food, the raw material, *of* thought. They must be described as, on the one hand, wholly outside of thought. This clearly puts them into the region of sense perception. They are matters of *sensation* given free from all inferring, judging, relating influence. Sensation is just what is *not* called up in memory or in anticipated projection—it is the immediate, the irreducible. On the other hand, sensory-matter is qualitative, and *qualia* are made up on a common basis. They are degrees or grades of a common quality. Thus they have a certain ready-made setting of mutual distinction and reference which is already almost, if not quite, the effect of comparing, of relating, effects which are the express traits of thinking.

positions there would be nothing to excite thought. Without the systematic arrangement of quality there would be nothing to meet thought and reward it for its efforts. The homogeneity of qualitative relationships, *in the pre-thought material*, gives the tools or instruments by which thought is enabled successfully to tackle the heterogeneity of collocations and conjunctions also found in the same material! One would suppose that when Lotze reached this point he might have been led to suspect that in his remarkable adjustment of thought-stimuli, thought-material, and thought-tools to one another, he must after all be dealing, not with something prior to the thought-function, but with the necessary structures and tools of the thought-situation.

It is easy to interpret this miraculous gift of grace in the light of what has been said. The data are in truth precisely that which is selected and set aside *as* present, as immediate. Thus they are *given* to *further* thought. But the selection has occurred in view of the need for thought, it is a listing of the capital in the way of the undisturbed, the undiscussed, which thought can count upon in this particular problem. Hence it is not strange that it has a peculiar fitness of adaptation for thought's further work. Having been selected with precisely that end in view, the wonder would be if it were not so fitted. A man may coin counterfeit money for use upon others, but hardly with the intent of passing it off upon himself.

Our only difficulty here is that the mind flies away from the logical interpretation of sense datum to a ready-made notion of it brought over from abstract psychological inquiry. The belief in isolated sensory *quales* which are somehow forced upon us, and forced upon us at large, and thus conditioning thought wholly *ab extra*, instead of determining it as instrumentalities or elements selected from experienced things for that very purpose, is too fixed. Sensory qualities *are* forced upon us, but *not* at large. The sensory data of experience always come *in a context*, they always appear as variations in a continuum. Even the thunder which breaks in upon me (to take the extreme of apparent discontinuity and irrelevancy) disturbs me because it is taken as thunder as a part of the

same space-world as that in which my chair and room and house are located, and it is taken as an influence which interrupts and disturbs, *because* it is part of a common 'world of causes and effects'. The solution of continuity is itself practical or teleological, and thus presupposes and affects continuity of purpose, occupations, and means in a life-process. It is not metaphysics, it is biology which enforces the idea that actual sensation is not only determined as an event in a world of events,¹ but is an occurrence occurring at a certain period in the control and use of stimuli.²

2 *Forms of thinking data*—As sensory datum is material set for work of thought, so the ideational forms with which thought does its work are apt and prompt to meet the needs of the material. The "accessory"³ notion of ground of coherence turns out, in truth, not to be a formal, or external, addition to the data, but a requalification of them. Thought is accessory as accomplice, not as addendum. "Thought" is to eliminate mere coincidence, and to assert grounded coherence. Lotze makes it clear that he does not at bottom conceive of "thought" as an activity "in itself" imposing a

¹ *Supra*, p. 113

² For the identity of sensory experience with the point of greatest strain and stress in conflicting or tensional experience, see "The Reflex Arc Concept in Psychology," *Psychological Review*, III, 57

³ For the "accessory" character of thought, see Lotze, I, 7, 25-27, 61, etc

form of coherence, but that the organizing work of "thought" is only the progressive realization of an inherent unity, or system, in the material experienced. The specific modes in which thought brings its "accessory" power to bear—names, conception, judgment, and inference—are successive stages in the adequate organization of the matter which comes to us first as data, they are successive stages of the effort to overcome the original defects of the data. Conception starts from the universal (the common element) of sense. Yet (and this is the significant point) it does not simply abstract this common element, and consciously generalize it over against its own differences. Such a "universal" is *not* coherence just because it does not *include* and dominate the temporal and local heterogeneity. The *true* concept (see I, 38) is a system of attributes, held together on the basis of some ground, or determining, dominating principle—a ground which so controls all its own instances as to make them into an inwardly connected whole, and which so specifies its own limits as to be exclusive of all else. If we abstract color as the common element of various colors, the result is not a scientific idea or concept. Discovery of a process of light-waves whose various rates constitute the various colors of the spectrum gives the concept. And when we get such a concept, the former mere temporal abruptness of color experiences gives way to ordered parts of a color system. The logical product—the

concept, in other words—is not a formal seal or stamp, it is a thoroughgoing connection of data in a dynamic continuity of existence

The form or mode of thought which marks the continued transformation of the data and the idea in reference to each other is judgment. Judgment makes explicit the assumption of a principle which determines connection within an individualized whole. It definitely states red as *this* case or instance of the law or process of color, and thus further overcomes the defect in *subject-matter* or data still left by conception.¹ Now judgment logically terminates in disjunction. It gives a universal which may determine

¹ Bosanquet (*Logic*, I, 30-34) and Jones (*Philosophy of Lotze*, 1895, chap. IV) have called attention to a curious inconsistency in Lotze's treatment of judgment. On one hand, the statement is as given above. Judgment grows out of conception in making explicit the determining relation of universal to its own particular, implied in conception. But, on the other hand, judgment grows not out of conception at all, but out of the question of determining connection in change. Lotze's nominal reason for this latter view is that the conceptual world is purely static, since the actual world is one of change, we need to pass upon what really goes together (is causal) in the change as distinct from such as are merely coincident. But, as Jones clearly shows, it is also connected with the fact that, while Lotze nominally asserts that judgment grows out of conception, he treats conception as the result of judgment since the first view makes judgment a mere explication of the content of an idea, and hence merely expository or analytic (in the Kantian sense) and so of more than doubtful applicability to reality. The affair is too large to discuss here, and I will content myself with referring to the oscillation between conflicting contents and gradation of sensory qualities already discussed (p. 144, note). It is judgment which grows out

any one of a number of alternative defined particulars, but which is arbitrary as to *what* one is selected. Systematic *inference* brings to light the material conditions under which the law, or dominating universal, applies to this, rather than that alternative particular, and so completes the ideal organization of the subject-matter. If this act were complete, we should finally have present to us a whole on which we

of the former, because judgment is the whole situation as such, conception is referable to the latter because it is one abstraction within the whole (the solution of possible meanings of the data) just as the datum is another. In truth, since the sensory datum is not absolute, but comes in a historical context, the qualities apprehended as constituting the datum simply define the locus of conflict in the entire situation. They are attributives of the contents-in-tension of the colliding things, not calm untroubled ultimates. On pp. 33 and 34 of Vol. I, Lotze recognizes (as we have just seen) that, as matter of fact, it is both sensory qualities in their systematic grading, or quantitative determinations (see I, 43, for the recognition of the necessary place of the quantitative in the true concept), and the "rich variety of local and temporal combinations," that provoke thought and supply it with material. But, as usual, he treats this simply as a historical accident, not as furnishing the key to the whole matter. In fine, while the heterogeneous collocations and successions constitute the problematic element that stimulates thought, quantitative determination of the sensory quality furnishes one of the two chief means through which thought deals with the problem. It is a reduction of the original colliding contents to a form in which the effort at reintegration gets maximum efficiency. The concept, as ideal meaning, is of course the other partner to the transaction. It is getting the various possible meanings-of-the-data into such shape as to make them most useful in construing the data. The bearing of this upon the subject and predicate of judgment cannot be discussed here.

should know the determining and effective or authorizing elements, and the order of development or hierarchy of dependence, in which others follow from them ¹

In this account by Lotze of the operations of the forms of thought, there is clearly put before us the picture of a continuous correlative determination of datum on one side and of idea or meaning on the other, till experience is again integral, data being thoroughly defined and connected, and ideas being the relevant meanings of subject-matter. That we have here in outline a description of what actually occurs there can be no doubt. But there is as little doubt that the description is thoroughly inconsistent with Lotze's supposition that the material or data of thought is precisely the same as the antecedent of thought, or that ideas, conceptions, are purely mental somewhat extraneously brought to bear, as the sole essential characteristics of thought, upon a material provided ready-made. It means but one thing. The maintenance of unity and wholeness in experience through conflicting contents occurs by means of a strictly correspondent setting apart of facts to be accurately described and properly related, and meanings to be adequately construed and properly referred. The datum is given *in* the thought-situation, and *to* further qualification of ideas or meanings. But even in this

¹ See I, 38, 59, 61, 105, 129, 197, for Lotze's treatment of these distinctions

aspect it presents a problem To find out *what* is given is an inquiry which taxes reflection to the uttermost Every important advance in scientific method means better agencies, more skilled technique for simply detaching and describing what is barely there, or given To be able to find out what can safely be taken as *there*, as given in any particular inquiry, and hence be taken as material for orderly and verifiable inference, for fruitful hypothesis-making, for entertaining of explanatory and interpretative ideas, is one phase of the effort of systematic scientific inquiry It marks its inductive phase To take what is discovered to be reliable evidence within a more complex *situation* as if it were given absolutely and in isolation, or apart from a particular historic situs and context, is the fallacy of empiricism as a logical theory To regard the thought-forms of conception, judgment, and inference as qualifications of "pure thought, apart from any difference in objects," instead of as successive dispositions in the progressive organization of the material (or objects), is the fallacy of rationalism Lotze, like Kant, attempts to combine the two, thinking thereby to correct each by the other

Lotze recognizes the futility of thought if the sense data as data are final, if they alone are real, the truly existent, self-justificatory and valid He sees that, if the empiricist were right in his assumption as to the real worth of the given data, thinking would be a ridiculous pretender, either toilfully and poorly doing

over again what needs no doing, or making a wilful departure from truth. He realizes that thought is evoked because it is needed, and that it has a work to do which is not merely formal, but which effects a modification of the subject-matter of experience. Consequently he assumes a thought-in-itself, with certain forms and modes of action of its own, a realm of meaning possessed of a directive and normative worth of its own—the root fallacy of rationalism. His attempted compromise between the two turns out to be based on the assumption of the indefensible ideas of both—the notion of an independent matter given to thought, on one side, and of an independent worth or force of thought-forms, on the other.

This pointing out of inconsistencies becomes stale and unprofitable save as we bring them back into connection with their root-origin—the erection of distinctions that are genetic and historic, and working or instrumental divisions of labor, into rigid and ready-made structural differences of reality. Lotze clearly recognizes that thought's nature is dependent upon its aim, its aim upon its problem, and this upon the situation in which it finds its incentive and excuse. Its work is cut out for it. It does not what it would, but what it must. As Lotze puts it, "Logic has to do with thought, not as it would be under hypothetical conditions, but as it is" (I, 33), and this statement is made in explicit combination with statements to the effect that the peculiarity of the material of thought

conditions its activity. Similarly he says, in a passage already referred to: "The possibility and the success of thought's production in general depends upon this original constitution and organization of the whole world of ideas, a constitution which, though not necessary in thought, is all the more necessary to make thought possible."¹

As we have seen, the essential nature of conception, judgment, and inference is dependent upon peculiarities of the propounded material, they being forms dependent for their significance upon the stage of organization in which they begin.

From this only one conclusion is possible. If thought's nature is dependent upon its actual conditions and circumstances, the primary logical problem is to study thought-in-its-conditioning, it is to detect the crisis within which thought and its subject-matter present themselves in their mutual distinction and cross-reference. But Lotze is so thoroughly committed to a ready-made antecedent of some sort, that this genetic consideration is of no account to him. The historic method is a mere matter of psychology, and has no logical worth (I, 2). We must presuppose a psychological mechanism and psychological material, but logic is concerned not with origin or history, but with authority, worth, value (I, 10). Again: "Logic is not concerned with the manner in which the elements utilized by thought come into

¹ I, 36, see also II, 290, 291

existence, but their value *after* they have somehow come into existence, for the carrying out of intellectual operations" (I, 34) And finally "I have maintained throughout my work that logic cannot derive any serious advantage from a discussion of *the conditions under which thought as a psychological process comes about* The significance of logical forms . is to be found in the utterances of thought, the laws which it imposes, after or during the act of thinking, not in the conditions which lie back of any which produce thought "'

Lotze, in truth, represents a halting-stage in the evolution of logical theory He is too far along to be contented with the reiteration of the purely formal distinctions of a merely formal thought-by-itself He recognizes that thought as formal is the form of some matter, and has its worth only as organizing that matter to meet the ideal demands of reason, and that "reason" is in truth only an adequate systematization of the matter or content Consequently he has to open the door to admit "psychical processes" which furnish this material Having let in the material, he is bound to shut the door again in the face of the processes from which the material proceeded—to dismiss them as unpertinent intruders

' II, 246, the same is reiterated in II, 250, where the question of origin is referred to as a corruption in logic Certain psychical acts are necessary as "conditions and occasions" of logical operations, but the "deep gulf between psychical mechanism and thought remains unfilled "

If thought gets its data in such a surreptitious manner, there is no occasion for wonder that the legitimacy of its dealings with the material remains an open question. Logical theory, like every branch of the philosophic disciplines, waits upon a surrender of the obstinate conviction that, while the work and aim of thought is conditioned by the material supplied to it, yet the *worth* of its performances is something to be passed upon in complete abstraction from conditions of origin and development.

V

THE OBJECTS OF THOUGHT

In the foregoing discussion, particularly in the last chapter, we were repeatedly led to recognize that thought has its own distinctive objects. At times Lotze gives way to the tendency to define thought entirely in terms of modes and forms of activity which are exercised by it upon a strictly foreign material. But two motives continually push him in the other direction. (1) Thought has a distinctive work to do, one which involves a qualitative transformation of (at least) the *relationships* of the presented matter, as fast as it accomplishes this work, the subject-matter becomes somehow thought's subject-matter. As we have just seen, the data are progressively organized to meet thought's ideal of a complete whole, with its members interconnected according to a determining principle. Such progressive organization throws backward doubt upon the assumption of the original total irrelevancy of the data and thought-forms to each other. (2) A like motive operates from the side of the subject-matter. As merely foreign and external, it is too heterogeneous to lend itself to thought's exercise and influence. The idea, as we saw in the first chapter, is the convenient medium through which Lotze passes from the purely heterogeneous psychical

impression or event, which is totally irrelevant to thought's purpose and working, over to a state of affairs which can reward thought. Idea as meaning forms the bridge over from the brute factuality of the psychical impression to the coherent value of thought's own content.

We have, in this chapter, to consider the question of the idea or content of thought from two points of view—first the *possibility* of such a content—its consistency with Lotze's fundamental premises; secondly, its *objective* character—its validity and test.

I. The question of the possibility of a specific content of thought is the question of the nature of the idea as meaning. *Meaning* is the characteristic object of thought. We have thus far left unquestioned Lotze's continual assumption of meaning as a sort of thought-unit, the building-stone of thought's construction. In his treatment of meaning, Lotze's contradictions regarding the antecedents, data, and content of thought reach their full conclusion. He expressly makes meaning to be the product of thought's activity and also the unreflective material out of which thought's operations grow.

This contradiction has been worked out in accurate and complete detail by Professor Jones.¹ He summarizes it as follows (p. 99): "No other way was left to him [Lotze] excepting this of first attributing all

¹ *Philosophy of Lotze*, chap. III, "Thought and the Preliminary Process of Experience."

to sense and afterwards attributing all to thought, and, finally, of attributing it to thought only because it was already in its material. This *seesaw* is essential to his theory, the elements of knowledge as he describes them can subsist only by the alternate robbery of each other." We have already seen how strenuously Lotze insists upon the fact that the given subject-matter of thought is to be regarded wholly as the work of a physical mechanism, "without any action of thought."¹ But Lotze also states that if the products of the psychical mechanism "are to admit of combination in the definite form of a *thought*, they each require some previous shaping to make them into logical building-stones and to convert them from *impressions* into *ideas*. Nothing is really more familiar to us than this first operation of thought, the only reason why we usually overlook it is that in the language which we inherit, it is already carried out, and it seems, therefore, to belong to the self-evident presuppositions of thought, *not to its own specific work*."² And again (I, 23), judgments "can consist of nothing but combinations of ideas which are no longer mere impressions every such idea must have undergone at least the simple formation mentioned above." Such ideas are, Lotze goes on to urge, already rudimentary concepts—that is to say, logical determinations.

The obviousness of the logical contradiction of attributing to a preliminary specific work of thought

¹ I, 38

² I, 13, last italics mine

exactly the condition of affairs which is elsewhere explicitly attributed to a psychical mechanism prior to any thought-activity, should not blind us to its import and relative necessity. The impression, it will be recalled, is a mere state of our own consciousness—a mood of ourselves. As such it has simply *de facto* relations as an event to other similar events. But reflective thought is concerned with the relationship of a content or matter to other contents. Hence the impression must have a matter before it can come at all within the sphere of thought's exercise. How shall it secure this? Why, by a preliminary activity of thought which objectifies the impression. Blue as a mere sensuous irritation or feeling is given a quality, the meaning "blue"—blueness, the sense impression is objectified, it is presented "no longer as a condition which we undergo, but as a something which has its being and its meaning in itself, and which continues to be what it is, and to mean what it means whether we are conscious of it or not. It is easy to see here the *necessary beginning of that activity which we above appropriated to thought as such* it has not yet got so far as converting coexistence into coherence. It has first to perform the previous task of investing each single impression with an independent validity, without which the later opposition of their real coherence to mere coexistence could not be made in any intelligible sense."¹

¹ I, 14, italics mine

This objectification, which converts a sensitive state into a sensible matter to which the sensitive state is referred, also gives this matter "position," a certain typical character. It is not objectified in a merely general way, but is given a specific sort of objectivity. Of these sorts of objectivity there are three mentioned: that of a substantive content; that of an attached dependent content, that of an active relationship connecting the various contents with each other. In short, we have the types of meaning embodied in language in the form of nouns, adjectives, and verbs. It is through this preliminary formative activity of thought that reflective or *logical* thought has presented to it a world of meanings ranged in an order of relative independence and dependence, and arranged as elements in a complex of meanings whose various constituent parts mutually influence one another's meanings.¹

As usual, Lotze mediates the contradiction between material constituted by thought and the same material just presented to thought, by a further position so disparate to each that, taken in connection with each by turns, it seems to bridge the gulf. After describing the prior constitutive work of thought as above, he goes on to discuss a *second* phase of thought which is intermediary between this and the third phase, viz., reflective thought proper. This second activity

¹ See I, 16-20. On p. 22 this work is declared to be not only the first but the most indispensable of all thought's operations.

is that of arranging experienced quales in series and groups, thus ascribing a sort of universal or common somewhat to various instances (as already described, see p 144) On one hand, it is clearly stated that this second phase of thought's activity is in reality the *same* as the first phase since all objectification involves positing, since positing involves distinction of one matter from others, and since this involves placing it in a series or group in which each is measurably marked off, as to the degree and nature of its diversity, from every other We are told that we are only considering "a really inseparable operation" of thought from two different sides first, as to the effect which objectifying thought has upon the matter as set over against the feeling *subject*, secondly, the effect which this objectification has upon the matter in relation to *other matters*¹ Afterward, however, these two operations are declared to be radically different in type and nature The first is determinant and formative, it gives ideas "the shape without which the logical spirit could not accept them" In a way it dictates "its own laws to its object-matter"² The second activity of thought is rather passive and receptive It simply recognizes what is already there "Thought can make no difference where it finds none already in the matter of impressions"³ "The first universal, as we saw, can

¹ I, 26² I, 35³ I, 36, see the strong statements already quoted, p 112 What if this canon were applied in the first act of thought referred to

only be experienced in immediate sensation. It is no product of thought, but something that thought finds already in existence."¹

The obviousness of this further contradiction is paralleled only by its inevitableness. Thought is in the air, is arbitrary and wild in dealing with meanings, unless it gets its start and cue from actual experience. Hence the necessity of insisting upon thought's activity as just recognizing the contents already given. But, on the other hand, prior to the work of thought there is to Lotze no content or meaning. It requires a work of thought to detach anything from the flux of sense irritations and invest it with a meaning of its own. This dilemma is inevitable to any writer who declines to consider as correlative the nature of thought-activity and thought-content from the standpoint of their generating conditions in the movement of experience. Viewed from such a standpoint the principle of solution is clear enough. As we have already seen (p. 121), the internal dissen-

above the original objectification which transforms the mere state into an abiding quality or meaning? Suppose, that is, it were said that the first objectifying act cannot make a substantial (or attached) quale out of a mere state of feeling, it must *find* the distinction it makes there already! It is clear we should at once get a *regressus ad infinitum*. We here find Lotze face to face with this fundamental dilemma: thought either arbitrarily forces in its own distinctions, or else just repeats what is already there—is either falsifying or futile. This same contradiction, so far as it affects the impression, has already been discussed. See p. 114.

¹ I, 31

sion of an experience leads to detaching certain factors previously integrated in the concrete experience as aspects of its own qualitative coloring, and to relegating them, for the time being (pending integration into further immediate qualities of a reconstituted experience), into a world of bare meanings, a sphere qualified as ideal throughout. These meanings then become the tools of thought in interpreting the data, just as the sense qualities which define the presented situation are the immediate matter for thought. The two *as mutually referred* are content. That is, the datum and the meaning as reciprocally qualified by each other constitute the objective of thought.

To reach this unification is thought's objective or goal. Every successive cross-section of reflective inquiry presents what may be taken for granted as the outcome of previous thinking, and as the determinant of further reflective procedure. Taken as defining the point reached in the thought-function and serving as constituent unit in further thought, it is content or logical object. Lotze's instinct is sure in identifying and setting over against each other the material given to thought and the content which is thought's own "building-stone." His contradictions arise simply from the fact that his absolute, non-historic method does not permit him to interpret this joint identity and distinction in a working, and hence relative, sense.

II The question of how the existence of meanings, or thought-contents, is to be understood merges imperceptibly into the question of the real objectivity or validity of such contents. The difficulty for Lotze is the now familiar one. So far as his logic compels him to insist that these meanings are the possession and product of thought (since thought is an independent activity), the ideas are merely ideas, there is no test of objectivity beyond the thoroughly unsatisfactory and formal one of their own mutual consistency. In reaction from this Lotze is thrown back upon the idea of these contents as the original matter given in the impressions themselves. Here there seems to be an objective or external test by which the reality of thought's operations may be tried, a given idea is verified or found false according to its measure of correspondence with the matter of experience as such. But now we are no better off. The original independence and heterogeneity of impressions and of thought is so great that there is no way to compare the results of the latter with the former. We cannot compare or contrast distinctions of worth with bare differences of factual existence (I, 2). The standard or test of objectivity is so thoroughly external that by original definition it is wholly outside the realm of thought. How can thought compare meanings with existences?

Or again, the given material of experience apart from thought is precisely the relatively chaotic and

unorganized, it even reduces itself to a mere sequence of psychical events. What sense is there in directing us to compare the highest results of scientific inquiry with the bare sequence of our own states of feeling, or even with the original data whose fragmentary and uncertain character was the exact motive for entering upon scientific inquiry? How can the former in any sense give a check or test of the value of the latter? This is professedly to test the validity of a system of meanings by comparison with that whose defects call forth the construction of the system of meanings.

Our subsequent inquiry simply consists in tracing some of the phases of the characteristic seesaw from one to the other of the two horns of the now familiar dilemma: either thought is separate from the matter of experience, and then its validity is wholly its own private business, or else the objective results of thought are already in the antecedent material, and then thought is either unnecessary or else has no way of checking its own performances.

1. Lotze assumes, as we have seen, a certain independent validity in each meaning or qualified content, taken in and of itself. "Blue" has a certain meaning, in and of itself, it is an *object* for consciousness as such, not merely its state or mood. After the original sense irritation through which it was mediated has entirely disappeared, it persists as a valid meaning. Moreover, it is an object or content of thought for

others as well. Thus it has a double mark of validity in the comparison of one part of my own experience with another, and in the comparison of my experience as a whole with that of others. Here we have a sort of validity which does not raise at all the question of *metaphysical* reality (I, 14, 15). Lotze thus seems to have escaped from the necessity of employing as check or test for the validity of ideas any reference to a real outside the sphere of thought itself. Such terms as "conjunction," "franchise," "constitution," "algebraic zero," etc., claim to possess objective validity. Yet none of these professes to refer to a reality beyond thought. Generalizing this point of view, validity or objectivity of meaning means simply that which is "identical for all consciousness" (I, 3), "it is quite indifferent whether certain parts of the world of thought indicate something which has beside an independent reality outside of thinking minds, or whether all that it contains exists only in the thoughts of those who think it, but with equal validity for them all" (I, 16).

So far it seems clear sailing. Difficulties, however, show themselves the moment we inquire what is meant by a self-identical content for all thought. Is this to be taken in a static or in a dynamic way? That is to say. Does it express the fact that a given content or meaning is *de facto* presented to the consciousness of all alike? Does this coequal presence guarantee an objectivity? Or does validity attach

to a given meaning or content in the sense that it directs and controls the further exercise of thinking, and thus the formation of further *new* objects of knowledge?

The former interpretation is alone consistent with Lotze's notion that the independent idea as such is invested with a certain validity or objectivity. It alone is consistent with his assertion that concepts precede judgments. It alone, that is to say, is consistent with the notion that reflective thinking has a sphere of ideas or meanings supplied to it at the outset. But it is impossible to entertain this belief. The stimulus which, according to Lotze, goads thought on from ideas or concepts to judgments and inferences is in truth simply the lack of validity, of objectivity in its original independent meanings or contents. A meaning as independent is precisely that which is not invested with validity, but which is a mere idea, a "notion," a fancy, at best a surmise which may turn out to be valid (and of course this indicates possible reference), a standpoint to have its value determined by its further active use. "Blue" as a mere detached floating meaning, an idea at large, would not gain in validity simply by being entertained continuously in a given consciousness, or by being made at one and the same time the persistent object of attentive regard by all human consciousnesses. If this were all that were required, the chimera, the centaur, or any other subjective con-

struction could easily gain validity "Christian Science" has made just this notion the basis of its philosophy

The simple fact is that in such illustrations as "blue," "franchise," "conjunction," Lotze instinctively takes cases which are not mere independent and detached meanings, but which involve reference to a *region* of experience, to a region of mutually determining social activities. The conception that reference to a *social* activity does not involve the same sort of reference of a meaning beyond itself that is found in physical matters, and hence may be taken quite innocent and free of the problem of reference to existence beyond meaning, is one of the strangest that has ever found lodgment in human thinking. Either both physical and social reference or neither is logical, if neither, then it is because the meaning functions, as it originates, in a specific situation which carries with it its own tests (see p. 96). Lotze's conception is made possible only by unconsciously substituting the idea of an object as a content of thought for a large number of persons (or a *de facto* somewhat for every consciousness), for the genuine definition of object as a *determinant* in a scheme of activity. The former is consistent with Lotze's conception of thought, but wholly indeterminate as to validity or intent. The latter is the test used experimentally in all concrete thinking, but involves a radical transformation of all Lotze's assumptions. A given idea

of the conjunction of the franchise, or of blue, is valid, not because everybody happens to entertain it, but because it expresses the factor of control or direction in a given movement of experience. The test of validity of idea¹ is its functional or instrumental use in effecting the transition from a relatively conflicting experience to a relatively integrated one. If Lotze's view were correct, "blue" valid once would be valid always—even when red or green were actually called for to fulfil specific conditions. This is to say validity really refers to rightfulness or adequacy of performance in an asserting of connection—not to a meaning as contemplated in detachment.

If we refer again to the fact that the genuine antecedent of thought is a situation which is disorganized in its structural elements, we can easily understand how certain contents may be detached and *held* apart as meanings or references, actual or possible. We can understand how such detached contents may be of use in effecting a review of the entire experience, and as affording standpoints and methods of a reconstruction which will maintain the integrity of behavior. We can understand how validity of meaning is measured by reference to something which is not mere meaning, by reference to something which lies beyond it as such—viz, the reconstitution of an

¹ As we have already seen, the concept, the meaning as such, is always a factor or status in a reflective situation, it is always a predicate of judgment, in use in interpreting and developing the logical subject, or datum of perception.

experience into which it enters as method of control. That paradox of ordinary experience and of scientific inquiry by which objectivity is given alike to matter of perception and to conceived relations—to facts and to laws—affords no peculiar difficulty because the test of objectivity is everywhere the same: anything is objective in so far as, through the medium of conflict, it controls the movement of experience in its reconstructive transition. There is not first an object, whether of sense perception or of conception, which afterward somehow exercises this controlling influence, but the objective is *any* existence exercising the function of control. It may only control the act of inquiry, it may only set on foot doubt, but this is direction of subsequent experience, and, in so far, is a token of objectivity. It has to be reckoned with.

So much for the thought-content or meaning as having a validity of its own. It does not have it as isolated or given or static, it has it in its dynamic reference, its use in determining further movement of experience. In other words, the "meaning," having been selected and made up with reference to performing a certain office in the evolution of a unified experience, can be tested in no other way than by discovering whether it does what it was intended to do and what it purports to do.¹

¹ Royce, in his *World and Individual*, I, chaps. vi and vii, has criticized the conception of meaning as valid, but in a way which

2 Lotze has to wrestle with this question of validity in a further respect. What constitutes the objectivity of thinking as a total attitude, activity, or function? According to his own statement, the meanings or valid ideas are after all only building-stones for logical thought. Validity is thus not a property of them in their independent existences, but of their mutual reference to each other. Thinking is the process of instituting these mutual references, of building up the various scattered and independent building-stones into the coherent system of thought. What is the validity of the various forms of thinking which find expression in the various types of judgment and in the various forms of inference? Categorical, hypothetical, disjunctive judgment, inference by induction, by analogy, by mathematical equation, classification, theory of explanation—all these are processes of reflection by which connection in an organized whole is given to the fragmentary meanings with which thought sets out. What shall we say of the validity of such processes?

implies that there is a difference between validity and reality, in the sense that the meaning or content of the valid idea becomes real only when it is experienced in direct *feeling*. The foregoing implies, of course, a difference between validity and reality, but finds the test of validity in exercise of the function of direction or control to which the idea makes pretension or claim. The same point of view would profoundly modify Royce's interpretation of what he terms "inner" and "outer" meaning. See Moore, *University of Chicago Decennial Publications*, III, on "Existence, Meaning, and Reality."

On one point Lotze is quite clear. These various logical acts do not really enter into the constitution of the valid world. The logical forms as such are maintained *only* in the process of thinking. The world of valid truth does not undergo a series of contortions and evolutions, paralleling in any way the successive steps and missteps, the succession of tentative trials, withdrawals, and retracings, which mark the course of our own thinking.¹

Lotze is explicit upon the point that only the thought-content in which the process of thinking issues has objective validity, the act of thinking is "purely and simply an inner movement of our own minds, made necessary to us by reason of the constitution of our nature and of our place in the world" (II, 279)

Here the problem of validity presents itself as the problem of the relation of the act of thinking to its own product. In his solution Lotze uses two metaphors—one derived from building operations, the other from traveling. The construction of a building requires of necessity certain tools and extraneous constructions, stagings, scaffoldings, etc., which are necessary to effect the final construction, but which

¹ II, 257, 265, and in general Book III, chap. iv. It is significant that thought itself, appearing as an act of thinking over against its own content, is here treated as psychical rather than as logical. Consequently, as we see in the text, it gives him one more difficulty to wrestle with—how a process which is *ex officio* purely psychical and subjective can yet yield results which are valid in a logical, to say nothing of an ontological, sense.

do not enter into the building as such. The activity has an instrumental, though not a constitutive, value as regards its product. Similarly, in order to get a view from the top of a mountain—this view being the objective—the traveler has to go through preliminary movements along devious courses. These again are antecedent prerequisites, but do not constitute a portion of the attained view.

The problem of thought as activity, as distinct from thought as content, opens up altogether too large a question to receive complete consideration at this point. Fortunately, however, the previous discussion enables us to narrow the point which is in issue just here. The question is whether the activity of thought is to be regarded as an independent function supervening entirely from without upon antecedents, and directed from without upon data, or whether it marks the phase of the transformation which the course of experience (whether practical, or artistic, or socially affectional or whatever) undergoes for the sake of its deliberate control. If it be the latter, a thoroughly intelligent sense can be given to the proposition that the activity of thinking is instrumental, and that its worth is found, not in its own successive states as such, but in the result in which it comes to conclusion. But the conception of thinking as an independent activity somehow occurring after an independent antecedent, playing upon an independent subject-matter, and finally effecting

an independent result, presents us with just one miracle the more

I do not question the strictly instrumental character of thinking. The problem lies not here, but in the interpretation of the nature of the instrument. The difficulty with Lotze's position is that it forces us into the assumption of a means and an end which are simply and only external to each other, and yet necessarily dependent upon each other—a position which, whenever found, is thoroughly self-contradictory. Lotze vibrates between the notion of thought as a tool in the external sense, a mere scaffolding to a finished building in which it has no part nor lot, and the notion of thought as an immanent tool, as a scaffolding which is an integral part of the very operation of building, and which is set up for the sake of the building-activity which is carried on effectively only with and through a scaffolding. Only in the former case can the scaffolding be considered as a *mere* tool. In the latter case the external scaffolding is *not* the instrumentality, the actual tool is the *action* of erecting the building, and this action involves the scaffolding as a constituent part of itself. The work of building is not set over against the completed building as mere means to an end, it *is* the end taken in process or historically, longitudinally, temporally viewed. The scaffolding, moreover, is not an external means to the process of erecting, but an organic member of it. It is no mere accident of language that "building"

has a double sense—meaning at once the process and the finished product. The outcome of thought is the thinking activity carried on to its own completion, the activity, on the other hand, *is* the outcome taken anywhere short of its own realization, and thereby still going on.

The only consideration which prevents easy and immediate acceptance of this view is the notion of thinking as something purely formal. It is strange that the empiricist does not see that his insistence upon a matter accidentally given to thought only strengthens the hands of the rationalist with his claim of thinking as an independent activity, separate from the actual make-up of the affairs of experience. Thinking as a merely formal activity exercised upon certain sensations or images or objects sets forth an absolutely meaningless proposition. The psychological identification of thinking with the process of association is much nearer the truth. It is, indeed, on the way to the truth. We need only to recognize that association is of matters or meanings, not of ideas as existences or events, and that the type of association we call *thinking* differs from casual fancy and revery by control in reference to an end, to apprehend how completely thinking is a reconstructive movement of actual contents of experience in relation to each other.

There is no miracle in the fact that tool and material are adapted to each other in the process of

reaching a valid conclusion. Were they external in origin to each other and to the result, the whole affair would, indeed, present an insoluble problem—so insoluble that, if this were the true condition of affairs, we never should even know that there was a problem. But, in truth, both material and tool have been secured and determined with reference to economy and efficiency in effecting the end desired—the maintenance of a harmonious experience. The builder has discovered that his building means building tools, and also building material. Each has been slowly evolved with reference to its fit employ in the entire function, and this evolution has been checked at every point by reference to its own correspondent. The carpenter has not thought at large on his building and then constructed tools at large, but has thought of his building in terms of the material which enters into it, and through that medium has come to the consideration of the tools which are helpful.

This is not a formal question, but one of the place and relations of the matters actually entering into experience. And they in turn determine the taking up of just those mental attitudes, and the employing of just those intellectual operations which most effectively handle and organize the material. Thinking is adaptation *to* an end *through* the adjustment of particular objective contents.

The thinker, like the carpenter, is at once stimulated and checked in every stage of his procedure by

the particular situation which confronts him A person is at the stage of wanting a new house well, then, his materials are available resources, the price of labor, the cost of building, the state and needs of his family, profession, etc, his tools are paper and pencil and compass, or possibly the bank as a credit instrumentality, etc Again, the work is beginning The foundations are laid This in turn determines its own specific materials and tools Again, the building is almost ready for occupancy The concrete process is that of taking away the scaffolding, clearing up the grounds, furnishing and decorating rooms, etc This specific operation again determines its own fit or relevant materials and tools It defines the time and mode and manner of beginning and ceasing to use them Logical theory will get along as well as does the practice of knowing when it sticks close by and observes the directions and checks inherent in each successive phase of the evolution of the cycle of experience The problem in general of validity of the thinking process as distinct from the validity of this or that process arises only when thinking is isolated from its historic position and its material context (see *ante*, p 95)

3 But Lotze is not yet done with the problem of validity, even from his own standpoint The ground shifts again under his feet It is no longer a question of the validity of the idea or meaning with which thought is supposed to set out, it is no longer a ques-

tion of the validity of the process of thinking in reference to its own product, it is the question of the validity of the product. Supposing, after all, that the final meaning, or logical idea, is thoroughly coherent and organized, supposing it is an object for all consciousness as such. Once more arises the question. What is the validity of even the most coherent and complete idea?—a question which arises and will not down. We may reconstruct the notion of the chimera until it ceases to be an independent idea and becomes a part of the system of Greek mythology. Has it gained in validity in ceasing to be an independent myth, in becoming an element in systematized myth? Myth it was and myth it remains. Mythology does not get validity by growing bigger. How do we know the same is not the case with the ideas which are the product of our most deliberate and extended scientific inquiry? The reference again to the content as the self-identical object of all consciousness proves nothing, the subject-matter of a hallucination does not gain validity in proportion to its social contagiousness.

According to Lotze, the final product is, after all, still thought. Now, Lotze is committed once for all to the notion that thought, in any form, is directed by and at an outside reality. 'The ghost haunts him to the last. How, after all, does even the ideally perfect valid thought apply or refer to reality? Its genuine subject is still beyond itself. At the last

Lotze can dispose of this question only by regarding it as a metaphysical, not a logical, problem (II, 281, 282) In other words, *logically* speaking, we are at the end just exactly where we were at the beginning—in the sphere of ideas, and of ideas only, plus a consciousness of the necessity of referring these ideas to a reality which is beyond them, which is utterly inaccessible to them, which is out of reach of any influence which they may exercise, and which transcends any possible comparison with their results “It is vain,” says Lotze, “to shrink from acknowledging the circle here involved all we know of the external world depends upon the ideas of it which are within us” (II, 185) “It is then this varied world of ideas within us which forms the sole material directly given to us” (II, 186) As it is the only material given to us, so it is the only material with which thought can end To talk about knowing the external world through ideas which are merely within us is to talk of an inherent self-contradiction There is no common ground in which the external world and our ideas can meet In other words, the original separation between an independent thought-material and an independent thought-function and purpose lands us inevitably in the metaphysics of subjective idealism, plus a belief in an unknown reality beyond, which although unknowable is yet taken as the ultimate test of the value of our ideas. At the end, after all our maneuvering we are where we

began with two separate disparates, one of meaning, but no existence, the other of existence, but no meaning

The other aspect of Lotze's contradiction which completes the circle is clear when we refer to his original propositions, and recall that at the outset he was compelled to regard the origination and conjunctions of the impressions, the elements of ideas, as themselves the effects exercised by a world of things already in existence (see p 31) He sets up an independent world of thought, and yet has to confess that both at its origin and at its termination it points with absolute necessity to a world beyond itself Only the stubborn refusal to take this initial and terminal reference of thought beyond itself as having a *historic* or temporal meaning, indicating a particular place of generation and a particular point of fulfilment, compels Lotze to give such objective references a transcendental turn

When Lotze goes on to say (II, 191) that the measure of truth of particular parts of experience is found in asking whether, when judged by thought, they are in harmony with other parts of experience, when he goes on to say that there is no sense in trying to compare the entire world of ideas with a reality which is non-existent (excepting as it itself should become an idea), he lands where he might better have frankly commenced ¹ He saves himself from

¹ Lotze even goes so far in this connection as to say that the antithesis between our ideas and the objects to which they are directed

utter skepticism only by claiming that the explicit assumption of skepticism—the need of agreement of a ready-made idea as such with an extraneous ready-made material as such—is meaningless. He defines correctly the work of thought as consisting in harmonizing the various portions of experience with each other. In this case the test of thought is the harmony or unity of experience actually effected. The test of validity of thought is beyond thought, just as at the other limit thought originates out of a situation which is not dependent upon thought. Interpret this before and beyond in a historic sense, as an affair of the place occupied and rôle played by thinking as a function in experience in relation to other non-intellectual experiences of things, and then the intermediate and instrumental character of thought, its dependence upon unreflective antecedents for its existence, and upon a consequent experience for its final test, becomes significant and necessary. Taken at large, apart from temporal development and control, it plunges us in the depths of a hopelessly complicated and self-revolving metaphysic

is itself a part of the world of ideas (II, 192). Barring the phrase "world of *ideas*" (as against world of continuous experience), he need only have commenced at this point to have traveled straight and arrived somewhere. But it is absolutely impossible to hold both this view and that of the original independent existence of something given to and in thought and an independent existence of a thought-activity, thought-forms, and thought-contents

VI

SOME STAGES OF LOGICAL THOUGHT

The man in the street, when asked what he thinks about a certain matter, often replies that he does not think at all, he knows. The suggestion is that thinking is a case of active uncertainty set over against conviction or unquestioning assurance. When he adds that he does not have to think, but knows, the further implication is that thinking, when needed, leads to knowledge, that its purpose or object is to secure stable equilibrium. It is the purpose of this paper to show some of the main stages through which thinking, understood in this way, actually passes in its attempt to reach its most effective working, that is, the maximum of reasonable certainty.

I wish to show how a variety of modes of thinking, easily recognizable in the progress of both the race and the individual, may be identified and arranged as successive species of the relationship which doubting bears to assurance, as various ratios, so to speak, which the vigor of doubting bears to mere acquiescence. The presumption is that the function of questioning is one which has continually grown in intensity and range, that doubt is continually chased back, and, being cornered, fights more desperately, and thus clears the ground more thoroughly. Its

successive stations or arrests constitute stages of thinking. Or to change the metaphor, just in the degree that what has been accepted as fact—the object of assurance—loses stable equilibrium, the tension involved in the questioning attitude increases, until a readjustment gives a new and less easily shaken equilibrium.

The natural tendency of man is not to press home a doubt, but to cut inquiry as short as possible. The practical man's impatience with theory has become a proverb, it expresses just the feeling that, since the thinking process is of use only in substituting certainty for doubt, any apparent prolongation of it is useless speculation, wasting time and diverting the mind from important issues. To follow the line of least resistance is to cut short the stay in the sphere of doubts and suggestions, and to make the speediest return into the world where one can act. The result, of course, is that difficulties are evaded or surmounted rather than really disposed of. Hence, in spite of the opposition of the would-be practical man, the needs of practice, of economy, and of efficiency have themselves compelled a continual deepening of doubt and widening of the area of investigation.

It is within this evolution that we have to find our stages of thinking. The initial stage is where the doubt is hardly endured but not entertained, it is no welcome guest but an intruder, to be got rid of as speedily as possible. Development of alternative

and competitive suggestions, the forming of suppositions (of ideas), goes but a little way. The mind seizes upon the nearest or most convenient instrument of dismissing doubt and reattaining security. At the other end is the definitive and conscious search for problems, and the development of elaborate and systematized methods of investigation—the industry and technique of science. Between these limits come processes which have started out upon the path of doubt and inquiry, and then halted by the way.

In the first stage of the journey, beliefs are treated as something fixed and static. To those who are using them they are simply another kind of fact. They are used to settle doubts, but the doubts are treated as arising quite outside the ideas themselves. Nothing is further from recognition than that ideas themselves are open to doubt, or need criticism and revision. Indeed, the one who uses static meanings is not even aware that they originated and have been elaborated for the sake of dealing with conflicts and problems. The ideas are just “there,” and they may be used like any providential dispensation to help men out of the troubles into which they have fallen.

Words are generally held responsible for this fixation of the idea, for this substantiation of it into a kind of thing. A long line of critics has made us familiar with the invincible habit “of supposing that wherever there is a name there is some reality

corresponding to it", of supposing that general and abstract words have their equivalent objects somewhere *in rerum natura*, as have also singular and proper names. We know with what simplicity of self-confidence the English empirical school has accounted for the ontological speculation of Plato. Words tend to fix intellectual contents, and give them a certain air of independence and individuality. That some truth is here expressed there can be no question. Indeed, the attitude of mind of which we are speaking is well illustrated in the person who goes to the dictionary in order to settle some problem in morals, politics, or science, who would end some discussion regarding a material point by learning what meaning is attached to terms by the dictionary as authority. The question is taken as lying outside of the sphere of science or intellectual inquiry, since the meaning of the word—the idea—is unquestionable and fixed.

But this petrifying influence of words is after all only a superficial explanation. There must be some meaning present or the word could not fix it, there must be something which accounts for the disposition to use names as a medium of fossilization. There is, in truth, a certain real fact—an existent reality—behind both the word and the meaning it stands for. This reality is social usage. The person who consults a dictionary is getting an established fact when he turns there for the definition of a term. He finds the sense in which the word is currently used. Social

customs are no less real than physical events. It is not possible to dispose of this fact of common usage by reference to mere convention, or any other arbitrary device. A form of social usage is no more an express invention than any other social institution. It embodies the permanent attitude, the habit taken toward certain recurring difficulties or problems in experience. Ideas, or meanings fixed in terms, show the scheme of values which the community uses in appraising matters that need consideration and which are indeterminate or unassured. They are held up as standards for all its members to follow. Here is the solution of the paradox. The fixed or static idea is a fact expressing an established social attitude, a custom. It is not merely verbal, because it denotes a force which operates, as all customs do, in controlling particular cases. But since it marks a mode of interpretation, a scheme for assigning values, a way of dealing with doubtful cases, it falls within the sphere of ideas. Or, coming to the life of the individual, the fixed meaning represents, not a state of consciousness fixed by a name, but a recognition of a habitual way of belief—a habit of understanding.

We find an apt illustration of fixed ideas in the rules prevalent in primitive communities, rules which minutely determine all acts in which the community as a whole is felt to have an interest. These rules are facts because they express customs, and carry with them certain sanctions. Their meaning does

not cease with judicial utterance. They are made valid at once in a practical way against anyone who departs from them. Yet as rules they are ideas, for they express general ways of defining doubtful matters in experience and of re-establishing certainty. An individual may fail in acknowledgment of them and explicit reference is then necessary. For one who has lost himself in the notion that ideas are psychical and subjective, I know of no better way to appreciate the significance of an idea than to consider that a social rule of judgment is nothing but a certain way of viewing or interpreting facts, as such it is an idea.

The point that is of special interest to us here, however, is that these ideas are taken as fixed and unquestionable, and that the cases to which they are to apply are regarded as in themselves equally fixed. So far as concerns the attitude of those who employ this sort of ideas, the doubt is simply as to what idea should be in a particular case. Even the Athenian Greeks, for instance, long kept up the form of indicting and trying a tree or implement through which some individual had been killed. There was a rule—a fixed idea—for dealing with all who offended against the community by destroying one of its citizens. The fact that an inanimate object, a thing without intention or volition, offended was not a *material* circumstance. It made no difference in the case, that is, there was no doubt as to the nature of the fact. It was as fixed as was the rule.

With advance in the complexity of life, however, rules accumulate, and discrimination—that is, a certain degree of inquiring and critical attitude—enters in. Inquiry takes effect, however, in seeking among a collection of fixed ideas just the one to be used, rather than in directing suspicion against any rule or idea as such, or in an attempt to discover or constitute a new one. It is hardly necessary to refer to the development of casuistry, or to the multiplication of distinctions within dogmas, or to the growth of ceremonial law in cumbrous detail, to indicate what the outcome of this logical stage is likely to be. The essential thing is that doubt and inquiry are directed neither at the nature of the intrinsic fact itself, nor at the value of the idea as such, but simply at the manner in which one is attached to the other. Thinking falls outside both fact and idea, and into the sphere of their external connection. It is still a fiction of judicial procedure that there is already in existence some custom or law under which every possible dispute—that is, every doubtful or unassured case—falls, and that the judge only declares which law is applicable in the particular case. This point of view has tremendously affected the theory of logic in its historic development.

One of the chief, perhaps the most important, instrumentalities in developing and maintaining fixed ideas is the need of instruction and the way in which it is given. If ideas were called into play only

when doubtful cases actually arise, they could not help retaining a certain amount of vitality and flexibility, but the community always instructs its new members as to its way of disposing of these cases before they present themselves. Ideas are proffered, in other words, separated from present doubt and remote from application, in order to escape future difficulties and the need of any thinking. In primitive communities this is the main purport of instruction, and it remains such to a very considerable degree. There is a prejudgment rather than judgment proper. When the community uses its resources to fix certain ideas in the mind—that is, certain ways of interpreting and regarding experience—ideas are necessarily formulated so as to assume a rigid and independent form. They are doubly removed from the sphere of doubt. The attitude is uncritical and dogmatic in the extreme—so much so that one might question whether it is to be properly designated as a stage of thinking.

In this form ideas become the chief instruments of social conservation. Judicial decision and penal correction are restricted and ineffective methods of maintaining social institutions unchanged, compared with instilling in advance uniform ideas—fixed modes of appraising all social questions and issues. These set ideas thus become the embodiment of the values which any group has realized and intends to perpetuate. The fixation supports them against dissipation through attrition of circumstance, and

against destruction through hostile attack. It would be interesting to follow out the ways in which such values are put under the protection of the gods and of religious rites, or themselves erected into quasi-divinities—as among the Romans. This, however, would hardly add anything to the logic of the discussion, although it would indicate the importance attached to the fixation of ideas, and the thoroughgoing character of the means used to secure immobilization.

The conserving value of the dogmatic attitude, the point of view which takes ideas as fixed, is not to be ignored. When society has no methods of science for protecting and perpetuating its achieved values, there is practically no other resort than such crystallization. Moreover, with any possible scientific progress, some equivalent of the fixed idea must remain. The nearer we get to the needs of action the greater absoluteness must attach to ideas. The necessities of action do not await our convenience. Emergencies continually present themselves where the fixity required for successful activity cannot be attained through the medium of investigation. The alternative to vacillation, confusion, and futility of action is importation to ideas of a positive and secured character, not in strict logic belonging to them. It is this sort of determination that Hegel seems to have in mind in what he terms *Verstand*—the understanding. "Apart from *Verstand*," he says, "there

is no fixity or accuracy in the region either of theory or practice", and, again, "*Verstand* sticks to fixity of characters and their distinctions from one another, it treats every meaning as having a subsistence of its own " In technical terminology, also, this is what is meant by "positing" ideas—hardening meanings

In recognizing, however, that fixation of intellectual content is a precondition of effective action, we must not overlook the modification that comes with the advance of thinking into more critical forms .At the outset fixity is taken as the rightful possession of the ideas themselves, it belongs to them and is their "essence " As the scientific spirit develops, we see that it is we who lend fixity to the ideas, and that this loan is for a purpose to which the meaning of the ideas is accommodated .Fixity ceases to be a matter of intrinsic structure of ideas, and becomes an affair of security in using them .Hence the important thing is the *way* in which we fix the idea—the manner of the inquiry which results in definition .We *take* the idea as if it were fixed, in order to secure the necessary stability of action .The crisis past, the idea drops its borrowed investiture, and reappears as surmise

When we substitute for ideas as uniform rules by which to decide doubtful cases that making over of ideas which is requisite to make them fit, the quality of thought alters .We may fairly say that we have

come into another stage. The idea is now regarded as essentially subject to change, as a manufactured article needing to be made ready for use. To determine the conditions of this transition lies beyond my purpose, since I have in mind only a descriptive setting forth of the periods through which, as a matter of fact, thought has passed in the development of the inquiry function, without raising the problem of its "why" and "how." At this point we shall not do more than note that, as the scheduled stock of fixed ideas grows larger, their application to specific questions becomes more difficult, prolonged, and roundabout. There has to be a definite hunting for the specific idea which is appropriate, there has to be comparison of it with other ideas. This comes to involve a certain amount of mutual compromise and modification before selection is possible. The idea thus gets somewhat shaken. It has to be made over so that it may harmonize with other ideas possessing equal worth. Often the very accumulation of fixed ideas commands this reconstruction. The dead weight of the material becomes so great that it cannot sustain itself without a readjustment of the center of gravity. Simplification and systematization are required, and these call for reflection. Critical cases come up in which the fiction of an idea or rule already in existence cannot be maintained. It is impossible to conceal that old ideas have to be radically modified before the situation can be dealt with. The friction

of circumstance melts away their congealed fixity
Judgment becomes legislative

Seeking illustrations at large, we find this change typified in Hebrew history in the growing importance of the prophet over the judge, in the transition from a justification of conduct through bringing particular cases into conformity with existent laws, into that effected by personal right-mindedness enabling the individual to see the law in each case for himself. Profoundly as this changed conception of the relation between law and particular case affected moral life, it did not, among Semites, directly influence the logical sphere. With the Greeks, however, we find a continuous and marked departure from positive declaration of custom. We have assemblies meeting to discuss and dispute, and finally, upon the basis of the considerations thus brought to view, to decide. The man of counsel is set side by side with the man of deed. Odysseus was much experienced, not only because he knew the customs and ways of old, but even more because from the richness of his experience he could make the pregnant suggestion to meet the new crisis. It is hardly too much to say that it was the emphasis put by the Greek mind upon discussion—at first as preliminary to decision, and afterward to legislation—which generated logical theory.

Discussion is thus an apt name for this attitude of thought. It is bringing various beliefs together, shaking one against another and tearing down their

rigidity It is conversation of thoughts, it is dialogue—the mother of dialectic in more than the etymological sense. No process is more recurrent in history than the transfer of operations carried on between different persons into the arena of the individual's own consciousness. The discussion which at first took place by bringing ideas from different persons into contact, by introducing them into the forum of competition, and by subjecting them to critical comparison and selective decision, finally became a habit of the individual with himself. He became a miniature social assemblage, in which pros and cons were brought into play struggling for the mastery—for final conclusion. In some such way we conceive reflection to be born.

It is evident that discussion, the agitation of ideas, if judged from the standpoint of the older fixed ideas, is a destructive process. Ideas are not only shaken together and apart, they are so shaken in themselves that their whole validity becomes doubtful. Mind, and not merely beliefs, becomes uncertain. The attempt to harmonize different ideas means that in themselves they are discrepant. The search for a conclusion means that accepted ideas are only points of view, and hence personal affairs. Needless to say it was the Sophists who emphasized and generalized this negative aspect—this presupposition of loss of assurance, of inconsistency, of “subjectivity.” They took it as applying not only to this, that, and

the other idea, but to ideas as ideas. Since ideas are no longer fixed contents, they are just expressions of an individual's way of thinking. Lacking inherent value, they merely express the interests that induce the individual to look this way rather than that. They are made by the individual's point of view, and hence will be unmade if he can be led to change his point of view. Where all was fixity, now all is instability. Where all was certitude, nothing now exists save opinion based on prejudice, interest, or arbitrary choice.

The modern point of view, while condemning sophistry, yet often agrees with it in limiting the reflective attitude as such to self-involution and self-conceit. From Bacon down, the appeal is to observation, to attention to facts, to concern with the external world. The sole genuine guaranty of truth is taken to be appeal to facts, and thinking as such is something different. If reflection is not considered to be merely variable matter, it is considered to be at least an endless mulling over of things. It is the futile attempt to spin truth out of inner consciousness. It is introspection, and theorizing, and mere speculation.

Such wholesale depreciation ignores the value inherent even in the most subjective reflection, for it takes the settled estate which is proof that thought is not needed, or that it has done its work, as if it supplied the standard for the occasions in which

problems are hard upon us, and doubt is rife. It takes the conditions which come about after and because we have thought to measure the conditions which call out thinking. Whenever we really need to reflect, we cannot appeal directly to the "fact," for the adequate reason that the stimulus to thinking arises just because "facts" have slipped away from us. The fallacy is neatly committed by Mill in his discussion of Whewell's account of the need of mental conception or hypothesis in "colligating" facts. He insists that the conception is "obtained" from the "facts" in which "it exists," is "impressed upon us from without," and also that it is the "darkness and confusion" of the facts that make us want the conception in order to create "light and order."¹

Reflection involves running over various ideas, sorting them out, comparing one with another, trying to get one which will unite in itself the strength of two, searching for new points of view, developing new suggestions, guessing, suggesting, selecting, and rejecting. The greater the problem, and the greater the shock of doubt and resultant confusion and uncertainty, the more prolonged and more necessary is the process of "mere thinking." It is a more obvious phase of biology than of physics, of sociology than of chemistry, but it persists in established sciences. If we take even a mathematical proposition, not *after* it has been demonstrated—and is thus capable

¹ *Logic*, Book IV, chap. II, § 2

of statement in adequate logical form—but while in process of discovery and proof, the operation of this subjective phase is manifest, so much so, indeed, that a distinguished modern mathematician has said that the paths which the mathematical inquirer traverses in any new field are more akin to those of the experimentalist, and even to those of the poet and artist, than to those of the Euclidean geometer

What makes the essential difference between modern research and the reflection of, say, the Greeks, is not the absence of “mere thinking,” but the presence of conditions for testing its results, the elaborate system of checks and balances found in the technique of modern experimentation. The thinking process does not now go on endlessly in terms of itself, but seeks outlet through reference to particular experiences. It is tested by this reference, not, however, as if a theory could be tested by directly comparing it with facts—an obvious impossibility—but through use in facilitating commerce with facts. It is tested as glasses are tested; things are looked at through the medium of specific meanings to see if thereby they assume a more orderly and clearer aspect, if they are less blurred and obscure.

The reaction of the Socratic school against the Sophistic may serve to illustrate the third stage of thinking. This movement was not interested in the *de facto* shaking of received ideas and a discrediting of all thinking. It was concerned rather with the

virtual appeal to a common denominator involved in bringing different ideas into relation with one another. In their comparison and mutual modification it saw evidence of the operation of a standard permanent meaning passing judgment upon their conflict, and revealing a common principle and standard of reference. It dealt not with the shaking and dissolution, but with a comprehensive permanent Idea finally to emerge. Controversy and discussion among different individuals may result in extending doubt, manifesting the incoherency of accepted ideas, and so throwing an individual into an attitude of distrust. But it also involves an appeal to a single thought to be accepted by both parties, thus putting an end to the dispute. This appeal to a higher court, this possibility of attaining a total and abiding intellectual object, which should bring into relief the agreeing elements in contending thoughts, and banish the incompatible factors, animated the Socratic search for the concept, the elaboration of the Platonic hierarchy of Ideas in which the higher substantiate the lower, and the Aristotelian exposition of the systematized methods by which general truths may be employed to prove propositions otherwise doubtful. At least, this historic development will serve to illustrate what is involved in the transition from the second to the third stage, the transformation of discussion into reasoning, of subjective reflection into method of proof.

Discussion, whether with ourselves or others, goes on by suggestion of clues, as the uppermost object of interest opens a way here or there. It is discursive and haphazard. This gives it the devious tendency indicated in Plato's remark that it needs to be tied to the post of reason. It needs, that is, to have the ground or basis of its various component statements brought to consciousness in such a way as to define the exact value of each. The Socratic contention is the need of compelling the common denominator, the common subject, underlying the diversity of views to exhibit itself. It alone gives a sure standard by which the claims of all assertions may be measured. Until this need is met, discussion is a self-deceiving play with unjudged, unexamined matters, which, confused and shifting, impose themselves upon us.

We are familiar enough with the theory that the Socratic universal, the Platonic idea, was generated by an ignorant transformation of psychological abstractions into self-existent entities. To insist upon this as the key to the Socratic logic is mere caricature. The objectivity of the universal stood for the sense of something decisive and controlling in all reflection, which otherwise is just manipulation of personal prejudices. This sense is as active in modern science as it was in the Platonic dialectic. What Socrates felt was the opinionated, conceited quality of the terms used in the moral and political discussion of his day, as that contrasted with the

subject-matter, which, if rightly grasped, would put an end to mere views and argumentations

By Aristotle's time the interest was not so much in the existence of standards of decision in cases of doubt and dispute as in the technique of their use. The judge was firmly seated on the bench. The parties in controversy recognized his jurisdiction, and their respective claims were submitted for adjudication. The need was for rules of procedure by which the judge might, in an obvious and impartial way, bring the recognized universal or decisive law to bear upon particular matters. Hence the elaboration of those rules of evidence, those canons of demonstrative force, which are the backbone of the Aristotelian logic. There was a code by which to decide upon the admissibility and value of proffered testimony—the rules of the syllogism. The figures and terms of the syllogism provided a scheme for deciding upon the exact bearing of every statement propounded. The plan of arrangement of major and minor premises, of major, minor, and middle terms, furnished a manifesto of the exact procedure to be followed in determining the probative force of each element in reasoning. The judge knew what testimony to permit, when and how it should be introduced, how it could be impeached or have its competence lessened, and how the evidence was to be arranged so that a summary would also be an exhibit of its value in establishing a conclusion.

This means that there now is a distinctive type of thinking marked off from mere discussion and reflection. It may be called either reasoning or proof. It is reasoning when we think of the regularity of the method for getting at and employing the unquestioned grounds which give validity to other statements. It is proof as regards the degree of logical desert thereby measured out to such propositions. Proof is the acceptance or rejection justified through the reasoning. To quote from Mill: "To give credence to a proposition as a conclusion from something else is to reason in the most extensive sense of the term. We say of a fact or statement, it is proved, when we believe its truth by reason of some other fact or statement from which it is said to follow."¹ Reasoning is marshaling a series of terms and propositions until we can bind some doubtful fact firmly to an unquestioned, although remote, truth, it is the regular way in which a certain proposition is brought to bear on a precarious one, clothing the latter with something of the peremptory quality of the former. So far as we reach this result, and so far as we can exhibit each step in the nexus and be sure it has been rightly performed, we have proof.

But questions still face us. How about that truth upon which we fall back as guaranteeing the credibility of other statements—how about our major premise?

¹ *Logic*, Book II, chap. i, § 1. I have changed the order of the sentences quoted, and have omitted some phrases.

Whence does it derive its guaranty? *Quis custodes custodiet?*

We may, of course, in turn subsume it under some further major premise, but an infinite regress is impossible, and on this track we are finally left hanging in the air. For *practical* purposes the unquestioned principle may be taken as signifying mutual concession or agreement—it denotes that as a matter of fact its truth is not called in question by the parties concerned. This does admirably for settling arguments and controversies. It is a good way of amicably arranging matters among those already friends and fellow-citizens. But scientifically the widespread acceptance of an idea seems to testify to custom rather than to truth, prejudice is strengthened in influence, but hardly in value, by the number who share it, conceit is none the less self-conceit because it turns the heads of many.

Great interest was indeed afterward taken in the range of persons who hold truths in common. The *quod semper ubique omnibus* became of great importance. This, however, was not, in theory at least, because common agreement was supposed to constitute the major premise, but because it afforded confirmatory evidence of its self-evident and universal character.

Hence the Aristotelian logic necessarily assumes certain first or fundamental truths unquestioned and unquestionable, self-evident and self-evidencing,

neither established nor modified by thought, but standing firm in their own right. This assumption was not, as modern dealers in formal logic would sometimes have it, an external psychological or metaphysical attachment to the theory of reasoning, to be omitted at will from logic as such. It was an essential factor of knowledge that there should be necessary propositions directly apprehended by reason and particular ones directly apprehended by sense. Reasoning could then join them. Without the truths we have only the play of subjective, arbitrary, futile opinion. *Judgment* has not taken place, and assertion is without warrant. Hence the scheduling of first truths is an organic part of any reasoning which is occupied with securing demonstration, surety of assent, or valid conviction. To deny the necessary place of ultimate truths in the logical system of Aristotle and his followers is to make them players in a game of social convention. It is to overlook, to invert, the fact that they were sincerely concerned with the question of attaining the grounds and process of assurance. Hence they were obliged to assume primary intuitions, metaphysical, physical, moral, and mathematical axioms, in order to get the pegs of certainty to which to tie the bundles of otherwise contingent propositions.

It would be going too far to claim that the regard for the authority of the church, of the fathers, of the Scriptures, of ancient writers, of Aristotle himself, so

characteristic of the Middle Ages, was the direct outcome of this presupposition of truths fixed and unquestionable in themselves. But the logical connection is sure. The supply of absolute premises that Aristotle was able to proffer was scant. In his own generation and situation this paucity made comparatively little difference, for to the mass of men the great bulk of values was still carried by custom, by religious belief, and social institution. It was only in the comparatively small sphere of persons who had come under the philosophic influence that need for the logical mode of confirmation was felt. In the mediaeval period, however, all important beliefs required to be concentrated by some fixed principle giving them stay and power, for they were contrary to obvious common-sense and natural tradition. The situation was exactly such as to call into active use the Aristotelian scheme of thought. Authority supplemented the meagerness of the store of universals known by direct intuition, the Aristotelian plan of reasoning afforded the precise instrumentality through which the vague and chaotic details of life could be reduced to order by subjecting them to authoritative rules.

It is not enough, however, to account for the ultimate major premises, for the unconditioned grounds upon which credibility is assigned. We have also to report where the other side comes from—matters so uncertain in themselves as to require that they have their

grounds supplied from outside. The answer in the Aristotelian scheme is an obvious one. It is the very nature of sense, of ordinary experience, to supply us with matters which in themselves are only contingent. There is a certain portion of the intellectual sphere, that derived from experience, which is infected throughout by its unworthy origin. It stands forever condemned to be merely empirical—particular, more or less accidental, inherently irrational. You cannot make gold from dross, and the best that can be done for and with material of this sort is to bring it under the protection of truth which has warrant and weight in itself.

We may now characterize this stage of thinking with reference to our original remark that different stages denote various degrees in the evolution of the doubt-inquiry function. As compared with the period of fixed ideas, doubt is awake, and inquiry is active, but in itself it is rigidly limited. On one side it is bounded by fixed ultimate truths, whose very nature is that they cannot be doubted, which are not products or functions in inquiry, but bases that investigation fortunately rests upon. In the other direction all "matters of fact," all "empirical truths" belong to a particular sphere or kind of existence, and one intrinsically open to suspicion. The region is condemned in a wholesale way. In itself it exhales doubt, it cannot be reformed, it is to be shunned, or, if this is not possible, to be escaped from by climb-

ing up a ladder of intermediate terms until we lay hold on the universal. The very way in which doubt is objectified, taken all in a piece, marks its lack of vitality. It is arrested and cooped up in a particular place. As with any doubtful character, the less of its company the better. Uncertainty is not realized as a necessary instrument in compelling experienced matters to reveal their meaning and inherent order.

This limitation upon inquiry settles the interpretation to be given thought at this stage—it is of necessity merely connective, merely mediating. It goes between the first principles—themselves, as to their validity, outside the province of thought—and the particulars of sense—also, as to their status and worth, beyond the dominion of thought. Thinking is subsumption—just placing a particular proposition under its universal. It is inclusion, finding a place for some questioned matter within a region taken as more certain. It is use of general truths to afford support to things otherwise shaky—an application that improves their standing, while leaving their content unchanged. This means that thought has only a formal value. It is of service in exhibiting and arranging grounds upon which any particular proposition may be acquitted or condemned, upon which anything already current may be assented to, or upon which belief may reasonably be withheld.

The metaphor of the law court is apt. There is assumed some matter to be either proved or

disproved As matter, as content, it is furnished. It is not to be found out In the law court it is not a question of discovering what a man specifically is, but simply of finding reasons for regarding him as guilty or innocent There is no all-around play of thought directed to the institution of something as fact, but a question of whether grounds can be adduced justifying acceptance of some proposition already set forth The significance of such an attitude comes into relief when we contrast it with what is done in the laboratory In the laboratory there is no question of proving that things are just thus and so, or that we must accept or reject a given statement, there is simply an interest in finding out what sort of things we are dealing with Any quality or change that presents itself may be an object of investigation, or may suggest a conclusion, for it is judged, not by reference to pre-existent truths, but by its suggestiveness, by what it may lead to The mind is open to inquiry in any direction Or we may illustrate by the difference between the auditor and an actuary in an insurance company One simply passes and rejects, issues vouchers, compares and balances statements already made out The other investigates any one of the items of expense or receipt, inquires how it comes to be what it is, what facts, as regards, say, length of life, condition of money market, activity of agents, are involved, and what further researches and activities are indicated

The illustrations of the laboratory and the expert remind us of another attitude of thought in which investigation attacks matters hitherto reserved. The growth, for example, of freedom of thought during the Renaissance was a revelation of the intrinsic momentum of the thought-process itself. It was not a mere reaction from and against mediaeval scholasticism. It was the continued operation of the machinery which the scholastics had set a-going. Doubt and inquiry were extended into the region of particulars, of matters of fact, with the view of reconstituting them through discovery of their own structure, no longer with the intention of leaving that unchanged while transforming their claim to credence by connecting them with some authoritative principles. Thought no longer found satisfaction in appraising them in a scale of values according to their nearness to, or remoteness from, fixed truths. Such work had been done to a nicety, and it was futile to repeat it. Thinking must find a new outlet. It was out of employment, and set to discover new lands. Galileo and Copernicus were travelers—as much so as the crusader, Marco Polo, and Columbus.

Hence the fourth stage—covering what is popularly known as inductive and empirical science. Thought takes the form of inference instead of proof. Proof, as we have already seen, is accepting or rejecting a given proposition on the ground of its connection or lack of connection with some other

proposition conceded or established But inference does not terminate in any given proposition, it is after precisely those not given It wants more facts, different facts Thinking in the mode of inference insists upon terminating in an intellectual advance, in a consciousness of truths hitherto escaping us Our thinking must not now "pass" certain propositions after challenging them, must not admit them because they exhibit certain credentials, showing a right to be received into the upper circle of intellectual society Thinking endeavors to compel things as they present themselves, to yield up something hitherto obscure or concealed This advance and extension of knowledge through thinking seems to be well designated by the term "inference" It does not certify what is otherwise doubtful, but "goes from the known to the unknown" It aims at pushing out the frontiers of knowledge, not at marking those already attained with signposts Its technique is not a scheme for assigning status to beliefs already possessed, but is a method for making friends with facts and ideas hitherto alien Inference reaches out, fills in gaps Its work is measured not by the patents of standing it issues, but by the material increments of knowledge it yields *Inventio* is more important than *judicium*, discovery than "proof"

With the development of empirical research, uncertainty or contingency is no longer regarded as infecting in a wholesale way an entire region, discrediting it

save as it can be brought under the protecting aegis of universal truths as major premises. Uncertainty is now a matter of detail. It is the question whether the particular fact is really what it has been taken to be. It involves contrast, not of a fact as a fixed particular over against some fixed universal, but of the existing mode of apprehension with another possible better apprehension.

From the standpoint of reasoning and proof the intellectual field is absolutely measured out in advance. Certainty is located in one part, intellectual indeterminateness or uncertainty in another. But when thinking becomes research, when the doubt-inquiry function comes to its own, the problem is just: What is the fact?

Hence the extreme interest in details as such, in observing, collecting, and comparing particular causes, in analysis of structure down to its constituent elements, interest in atoms, cells, and in all matters of arrangement in space and time. The microscope, telescope, and spectroscope, the scalpel and microtome, the kymograph and the camera are not mere material appendages to thinking, they are as integral parts of investigative thought as were *Barbara*, *Celarent*, etc., of the logic of reasoning. Facts must be discovered, and to accomplish this, apparent "facts" must be resolved into their elements. Things must be readjusted in order to be held free from intrusion of impertinent circumstance and misleading

suggestion Instrumentalities of extending and rectifying research are, therefore, of themselves organs of thinking The specialization of the sciences, the almost daily birth of a new science, is a logical necessity—not a mere historical episode Every phase of experience must be investigated, and each characteristic aspect presents its own peculiar problems which demand, therefore, their own technique of investigation The discovery of difficulties, the substitution of doubt for quiescent acceptance, are more important than the sanctioning of belief through proof Hence the importance of noting apparent exceptions, negative instances, extreme cases, anomalies The interest is in the discrepant because that stimulates inquiry, not in the fixed universal which would terminate it once for all Hence the roaming over the earth and through the skies for new facts which may be incompatible with old theories, and which may suggest new points of view

To illustrate these matters in detail would be to write the history of every modern science The interest in multiplying phenomena, in increasing the area of facts, in developing new distinctions of quantity, structure, and form, is obviously characteristic of modern science But we do not always heed its logical significance – that it makes thinking to consist in the extension and control of contact with new material so as to lead regularly to the development of new experience

The elevation of the region of facts—the formerly condemned region of the inherently contingent and variable—to something that invites and rewards inquiry, defines the import, therefore, of the larger aspects of modern science. This spirit prides itself upon being positivistic—it deals with the observed and the observable. It will have naught to do with ideas that cannot verify themselves by showing themselves *in propria persona*. It is not enough to present credentials from more sovereign truths. These are hardly acceptable even as letters of introduction. Refutation of Newton's claim, that he did not make hypotheses, by pointing out that no one was busier in this direction than he, and that scientific power is generally in direct ratio to ability to imagine possibilities, is as easy as it is irrelevant. The hypotheses, the thoughts, that Newton employed were of and about fact, they were for the sake of exacting and extending what can be apprehended. Instead of being sacrosanct truths affording a redemption by grace to facts otherwise ambiguous, they were the articulating of ordinary facts. Hence the notion of law changes. It is no longer something governing things and events from on high, it is the statement of their own order.

Thus the exiling of occult forces and qualities is not so much a specific achievement as it is a demand of the changed attitude. When thinking consists in the detection and determination of observable detail,

forces, forms, qualities at large, are thrown out of employment. They are not so much proved non-existent as rendered nugatory. Disuse breeds their degeneration. When the universal is but the order of the facts themselves, the mediating machinery disappears along with the essences. There is substituted for the hierarchical world in which each degree in the scale has its righteousness imputed from above a world homogeneous in structure and in the scheme of its parts, the same in heaven, earth, and the uttermost parts of the sea. The ladder of values from the sublunary world with its irregular, extravagant, imperfect motion up to the stellar universe, with its self-returning perfect order, corresponded to the middle terms of the older logic. The steps were graduated, ascending from the indeterminate, unassured matter of sense up to the eternal, unquestionable truths of rational perception. But when interest is occupied in finding out what anything and everything is, any fact is just as good as its fellow. The observable world is a democracy. The difference which makes a fact what it is is not an exclusive distinction, but a matter of position and quantity, an affair of locality and aggregation, traits which place all facts upon the same level, since all other observable facts also possess them and are, indeed, conjointly responsible for them. Laws are not edicts of a sovereign binding a world of subjects otherwise lawless, they are the agreements, the compacts of facts themselves, or, in the familiar

language of Mill, the common attributes, the resemblances

The emphasis of modern science upon control flows from the same source. Interest is in the new, in extension, in discovery. Inference is the advance into the unknown, the use of the established to win new worlds from the void. This requires and employs regulation—that is, method—in procedure. There cannot be a blind attack. A plan of campaign is needed. Hence the so-called practical applications of science, the Baconian “knowledge is power,” the Comteian “science is prevision,” are not extralogical addenda or supererogatory benefits. They are intrinsic to the logical method itself, which is just the orderly way of approaching new experiences so as to grasp and hold them.

The attitude of research is necessarily toward the future. The application of science to the practical affairs of life, as in the stationary engine, or telephone, does not differ in principle from the determination of wave-lengths of light through the experimental control of the laboratory. Science lives only in arranging for new contacts, new insights. The school of Kant agrees with that of Mill in asserting that judgment must, in order to be judgment, be synthetic or instructive, it must extend, inform, and purvey. When we recognize that this service of judgment in effecting growth of experience is not accidental, but that judgment means exactly the devising and using

of suitable instrumentalities for this end, we remark that the so-called practical uses of science are only the further and freer play of the intrinsic movement of discovery itself

We began with the assumption that thought is to be interpreted as a doubt-inquiry function, conducted for the purpose of arriving at that mental equilibrium known as assurance or knowledge. We assumed that various stages of thinking could be marked out according to the amount of play which they give to doubt, and the consequent sincerity with which thinking is identified with free inquiry. Modern scientific procedure, as just set forth, seems to define the ideal or limit of this process. It is inquiry emancipated, universalized, whose sole aim and criterion is discovery, and hence it marks the terminus of our description. It is idle to conceal from ourselves, however, that scientific procedure as a practical undertaking, has not as yet reflected itself into any coherent and generally accepted theory of thinking, into any accepted doctrine of logic which is comparable to the Aristotelian. Kant's conviction that logic is a "complete and settled" science, which with absolutely "certain boundaries has gained nothing and lost nothing since Aristotle," is startlingly contradicted by the existing state of discussion of logical doctrine. The simple fact of the case is that there are at least three rival theories on

the ground, each claiming to furnish the sole proper interpretation of the actual procedure of thought

The Aristotelian logic is far from having withdrawn its claim. It still offers its framework as that into which the merely "empirical" results of observation and experimental inquiry must be fitted if they are to be regarded as really "proved." Another school of logicians, starting professedly from modern psychology, discredits the whole traditional industry and reverses the Aristotelian theory of validity, it holds that only particular facts are self-supporting, and that the authority allowed to general principles is derivative and second hand. A third school of philosophy claims, by analysis of science and experience, to justify the conclusion that the universe itself is a construction of thought, giving evidence throughout of the pervasive and constitutive action of reason, and holds, consequently, that our logical processes are simply the reading off or coming to consciousness of the inherently rational structure already possessed by the universe in virtue of the presence within it of this pervasive and constitutive action of thought. It thus denies both the claim of the traditional logic, that matters of experienced fact are mere particulars having their rationality in an external ground, and the claim of the empirical logic, that thought is just a gymnastic by which we vault from one presented fact to another remote in space and time

Which of the three doctrines is to be regarded as the legitimate exponent of the procedure of thought manifested in modern science? While the Aristotelian logic is willing to waive a claim to be regarded as expounder of the actual procedure, it still insists upon its right to be regarded as the sole ultimate umpire of the validity or *proved* character of the results reached. But the empirical and transcendental logics stand face to face as rivals, each asserting that it alone tells the story of what science does and how it does it.

With the consciousness of this conflict my discussion in its present, or descriptive, phase must cease. Its close, however, suggests a further question. In so far as we adopt the conception that thinking is itself a doubt-inquiry process, must we not deny the claims of all of the three doctrines to be the articulate voicing of the methods of experimental science? Do they not all agree in setting up something fixed outside inquiry, supplying both its material and its limit? That the first principle and the empirical matters of fact of the Aristotelian logic fall outside the thinking process, and condemn the latter to a purely external and go-between agency, has been already sufficiently descanted upon. But it is also true that the fixed particulars, given facts, or sensations—whatever the empirical logician starts from—are material given ready-made to the thought-process, and externally limiting inquiry, instead of being distinctions arising

within and because of search for truth Nor, as regards this point, is the transcendental in any position to throw stones at the empirical logic Thought "in itself" is so far from a process of inquiry that it is taken to be the eternal, fixed structure of the universe, *our* thinking, involving doubt and investigation, is due wholly to our "finite," imperfect character, which condemns us to the task of merely imitating and re-instating "thought" in itself, once and forever complete, ready-made, fixed

The practical procedure and practical assumptions of modern experimental science, since they make thinking essentially and not merely accidentally a process of discovery, seem irreconcilable with both the empirical and transcendental interpretations At all events there is here sufficient discrepancy to give occasion for further search Does not an account of thinking, basing itself on modern scientific procedure, demand a statement in which all the distinctions and terms of thought—judgment, concept, inference, subject, predicate, and copula of judgment, etc., *ad infinitum*—shall be interpreted simply and entirely as distinctive functions or divisions of labor within the doubt-inquiry process?

VII

THE LOGICAL CHARACTER OF IDEAS

Said John Stuart Mill "To draw inferences has been said to be the great business of life It is the only occupation in which the mind never ceases to be engaged " If this be so, it seems a pity that Mill did not recognize that this business identifies what we mean when we say "mind " If he had recognized this, he would have cast the weight of his immense influence not only against the conception that mind is a substance, but also against the conception that it is a collection of existential states or attributes without any substance in which to inhere, and he would thereby have done much to free logic from epistemological metaphysics In any case, an account of intellectual operations and conditions from the standpoint of the rôle played and position occupied by them in the business of drawing inferences is a different sort of thing from an account of them as having an existence *per se*, from treating them as making up some sort of existential material distinct from the *things* which figure in inference-drawing This latter type of treatment is that which underlies the psychology which itself has adopted uncritically the remnants of the metaphysics of soul substance

the idea of accidents without the substance.¹ This assumption from metaphysical psychology—the assumption of consciousness as an existent stuff or existent process—is then carried over into an examination of knowledge, so as to make the theory of knowledge not logic (an account of the ways in which valid inferences or conclusions from things to other things are made), but epistemology.

We have, therefore, the result (so unfortunate for logic) that logic is not free to go its own way, but is compromised by the assumption that knowledge goes on not in terms of things (I use “things” in the broadest sense, as equaling *res*, and covering affairs, concerns, acts, as well as “things” in the narrower sense), but in terms of a relation *between* things and a peculiar existence made up of consciousness, or else between things and functional operations of this existence. If it could be shown that psychology is essentially not a science of states of consciousness, but of behavior, conceived as a process of continuous readjustment, then the undoubted facts which go by the name of sensation, perception, image, emotion, concept, would be interpreted to mean peculiar (i e ,

¹ This conception of “consciousness” as a sort of reduplicate world of things comes to us, I think, chiefly from Hume’s conception that the “*mind* is nothing but a heap, a collection of different perceptions, united together by certain relations”—*Treatise of Human Nature*, Book I, Part IV, sec. 2. For the evolution of this sort of notion out of the immaterial substance notion, see Bush, “A Factor in the Genesis of Idealism,” in the *James Festschrift*.

specifically qualitative) epochs, phases, and crises in the scheme of behavior. The supposedly scientific basis for the belief that states of consciousness inherently define a separate type of existence would be done away with. Inferential knowledge, knowledge involving reflection, *psychologically* viewed, would be assimilated to a certain mode of readaptation of functions, involving shock and the need of control; 'knowledge' in the sense of direct non-reflective presence of things would be identified (psychologically) with relatively stable or completed adjustments. I can not profess to speak for psychologists, but it is an obvious characteristic of the contemporary status of psychology that one school (the so-called functional or dynamic) operates with nothing more than a conventional and perfunctory reference to "states of consciousness", while the orthodox school makes constant concessions to ideas of the behavior type. It introduces the conceptions of fatigue, practice, and habituation. It makes its fundamental classifications on the basis of physiological distinctions (e.g., the centrally initiated and the peripherally initiated), which, from a biological standpoint, are certainly distinctions of structures involved in the performance of acts.

One of the aims of the *Studies in Logical Theory* was to show, on the negative or critical side, that the type of logical theory which professedly starts its account of knowledge from mere states of conscious-

ness is compelled at every crucial juncture to assume *things*, and to define its so-called mental states in terms of things,¹ and, on the positive side, to show that, logically considered, such distinctions as sensation, image, etc., mark instruments and crises in the development of controlled judgment, i.e., of inferential conclusions. It was perhaps not surprising that this effort should have been criticized not on its own merits, but on the assumption that this correspondence of the (functional) psychological and the logical points of view was intended in terms of the psychology which obtained in the *critic's* mind—to wit, the psychology based on the assumption of consciousness as a separate existence or process.

These considerations suggest that before we can intelligently raise the question of the truth of ideas we must consider their status in judgment, judgment being regarded as the typical expression of the inferential operation. (1) Do ideas present themselves except in situations which are doubtful and inquired into? Do they exist side by side with the facts when the facts are themselves known? Do they exist except when judgment is in suspense? (2) Are "ideas" anything else except the suggestions, conjectures, hypotheses, theories (I use an ascending

¹ See, for example, p. 113. "Thus that which is 'nothing but a state of our consciousness' turns out straightway to be a specifically determined objective fact in a system of facts" and, p. 147, "actual sensation is determined as an event in a world of events."

scale of terms) tentatively entertained during a suspended conclusion? (3) Do they have any part to play in the conduct of inquiry? Do they serve to direct observation, colligate data, and guide experimentation, or are they otiose?¹ (4) If the ideas have a function in directing the reflective process (expressed in judgment), does success in performing the function (that is, in directing to a conclusion which is stable) have anything to do with the logical worth or validity of the ideas? (5) And, finally, does validity have anything to do with truth? Does "truth" mean something inherently different from the fact that the conclusion of one judgment (the known fact, previously unknown, in which judging terminates) is itself applicable in further situations of doubt and inquiry? And is judgment properly more than tentative save as it terminates in a known fact, i.e., a fact present without the intermediary of reflection?

When these questions—I mean, of course, questions which are exemplified in these queries—are answered, we shall, perhaps, have gone as far as it is possible to go with reference to the *logical* character of ideas. The question may then recur as to whether the "ideas" of the epistemologist (that is, existences

¹ When it is said that an idea is a "plan of action," it must be remembered that the term "plan of action" is a formal term. It throws no light upon *what* the action is with respect to which an idea is the plan. It may be chopping down a tree, finding a trail, or conducting a scientific research in mathematics, history, or chemistry.

in a purely "private stream of consciousness") remain as something over and above, not yet accounted for, or whether they are perversions and misrepresentations of logical characters. I propose to give a brief dogmatic reply in the latter sense. Where, and in so far as, there are unquestioned objects, there is no "consciousness." There are just things. When there is uncertainty, there are dubious, suspected objects—things hinted at, guessed at. Such objects have a distinct status, and it is the part of good sense to give them, as occupying that status, a distinct caption. "Consciousness" is a term often used for this purpose, and I see no objection to that term, *provided* it is recognized to mean such objects as are problematic, plus the fact that in their problematic character they may be used, as effectively as accredited objects, to direct observations and experiments which finally relieve the doubtful features of the situation. Such "objects" may turn out to be valid, or they may not. But, in any case, they may be used. They may be internally manipulated and developed through ratiocination into explicit statement of their implications, they may be employed as standpoints for selecting and arranging data, and as methods for conducting experiments. In short, they are not merely hypothetical, they are *working* hypotheses. Meanwhile, their aloofness from accredited objectivity may lead us to characterize them as merely ideas, or even as "mental states," provided

once more we mean by mental state just this logical status

We have examples of such ideas in symbols. A 'symbol, I take it, is always itself, existentially, a particular object. A word, an algebraic sign, is just as much a concrete existence as is a horse, a fire-engine, or a flyspeck. But its value resides in its representative character in its suggestive and directive force for operations that when performed lead us to non-symbolic objects, which without symbolic operations would not be apprehended, or at least would not be so easily apprehended. It is, I think, worth noting that the capacity (*a*) for regarding objects as mere symbols and (*b*) for employing symbols instrumentally furnishes the only safeguard against dogmatism, i.e., uncritical acceptance of any suggestion that comes to us vividly, and also that it furnishes the only basis for intelligently controlled experiments.

I do not think, however, that we should have the tendency to regard ideas as *private*, as personal, if we stopped short at this point. If we had only words or other symbols uttered by others, or written, or printed, we might call them, when in objective suspense, mere ideas. But we should hardly think of these ideas as our own. Such extra-organic stimuli, however, are not adequate logical devices. They are too rigid, too "objective" in their own existential status. Their meaning and character are too defi-

nitely fixed For effective discovery we need things which are more easily manipulated, which are more transitive, more easily dropped and changed Intra-organic events, adjustments *within* the organism, that is, adjustments of the organism considered not with reference to the environment but with reference to one another, are much better suited to stand as representatives of genuinely dubious objects An object which is *really* doubted is by its nature precarious and inchoate, vague What *is* a thing when it is not yet discovered and yet is tentatively entertained and tested?

Ancient logic never got beyond the conception of an object whose logical *place*, whose subsumptive position as a particular with reference to some universal, was doubtful It never got to the point where it could search for particulars which in themselves as particulars are doubtful Hence it was a logic of proof, of deduction, not of inquiry, of discovery, and of induction It was hard up against its own dilemma How can a man inquire? For either he knows that for which he seeks, and hence does not seek or he does not know, in which case he can not seek, nor could he tell if he found The individualistic movement of modern life detached, as it were, the individual, and allowed personal (i e , intra-organic) events to have, transitively and temporarily, a worth of their own These events are continuous with extra-organic events (in origin and eventual outcome),

but they may be considered in temporary displacement as uniquely existential. In this capacity they serve as means for the elaboration of a delayed but more adequate response in a radically different direction. So treated, they are tentative, dubious but experimental, anticipations of an object. They are "subjective" (i.e., individualistic) surrogates of public, cosmic things, which may be so manipulated and elaborated as to terminate in public things which without them would not exist as empirical objects.¹

The recognition then of intra-organic events, which are not merely effects nor distorted refractions of cosmic objects, but inchoate *future* cosmic objects in process of experimental construction, resolves to my mind, the paradox of so-called subjective and private things that have objective and universal reference, and that operate so as to lead to objective consequences which test their own value. When a man can say 'This color is not necessarily the color of the glass nor the picture nor even of an object reflected but is at least an event in my nervous system, an event which I may refer to my organism till I get *surety of other reference*—he is for the first time emancipated from the dogmatism of unquestioned reference, and is set upon a path of experimental inquiry.

¹ I owe this idea, both in its historical and in its logical aspects, to my former colleague, Professor Mead, of the University of Chicago.

I am not here concerned with trying to demonstrate that this is the correct mode of interpretation. I am only concerned with pointing out its radical difference from the view of a critic who, holding to the two-world theory of existences which from the start are divided into the fixedly objective and the fixedly psychical, interprets in terms of his own theory the view that the distinction between the objective and the subjective is a logical-practical distinction. Whether the logical, as against the ontological, theory be true or false, it can hardly be fruitfully discussed without a preliminary apprehension of it as a logical conception.

VIII

THE CONTROL OF IDEAS BY FACTS

I

There is something a little baffling in much of the current discussion regarding the reference of ideas to facts. The not uncommon assumption is that there was a satisfactory and consistent theory of their relation in existence prior to the somewhat impertinent intrusion of a functional and practical interpretation of them. The way the instrumental logician has been turned upon by both idealist and realist is suggestive of the way in which the outsider who intervenes in a family jar is proverbially treated by both husband and wife, who manifest their unity by berating the third party.

I feel that the situation is due partly to various misapprehensions, inevitable perhaps in the first presentation of a new point of view¹ and multiplied in this instance by the coincidence of the presentation of this logical point of view with that of the larger philosophical movements, humanism and pragmatism. I wish here to undertake a summary statement of the logical view on its own account, hoping it may receive clearer understanding on its own merits.

¹ *Studies in Logical Theory*, University of Chicago Press, 1903

In the first place it was (apart from the frightful confusion of logical theories) precisely the lack of an adequate and generally accepted theory of the nature of fact and idea, and of the kind of agreement or correspondence between them which constitutes the truth of the idea, that led to the development of a functional theory of logic. A brief statement of the difficulties in the traditional views may therefore be pertinent. That fruitful thinking—thought that terminates in valid knowledge—goes on in terms of the distinction of facts and judgment, and that valid knowledge is precisely genuine correspondence or agreement, *of some sort*, of fact and judgment, is the common and undeniable assumption. But the discussions are largely carried on in terms of an epistemological dualism, rendering the solution of the problem impossible in virtue of the very terms in which it is stated. The distinction is at once identified with that between mind and matter, consciousness and objects, the psychical and the physical, where each of these terms is supposed to refer to some fixed order of existence, a world in itself. Then, of course, there comes up the question of the nature of the agreement, and of the recognition of it. What is the experience in which the survey of both idea and existence is made and their agreement recognized? Is it an idea? Is the agreement ultimately a matter of self-consistency of ideas? Then what has become of the postulate that truth is agreement of idea with existence beyond idea?

Is it an absolute which transcends and absorbs the difference? Then, once more, what is the test of any specific judgment? What has become of the correspondence of fact and thought? Or, more urgently, since the pressing problem of life, of practice and of science, is the discrimination of the *relative*, or *superior*, validity of this or that theory, plan, or interpretation, what is the criterion of truth within present non-absolutistic experience, where the distinction between factual conditions and thoughts and the necessity of some working adjustment persist?

Putting the problem in yet another way, either both fact and idea are present all the time or else only one of them is present. But if the former, why should there be an idea at all, and why should it have to be tested by the fact? When we already have what we want, namely, existence, reality, why should we take up the wholly supernumerary task of forming more or less imperfect ideas of those facts, and then engage in the idle performance of testing them by what we already know to be? But if only ideas are present, it is idle to speak of comparing an idea with facts and testing its validity by its agreement. The elaboration and refinement of ideas to the uttermost still leaves us with an idea, and while a self-consistent idea stands a show of being true in a way in which an incoherent one does not, a self-consistent idea is still but a hypothesis, a candidate for truth. Ideas are not made true by getting bigger. But if

only 'facts' are present, the whole conception of agreement is once more given up—not to mention that such a situation is one in which there is by definition no thinking or reflective factor at all

This suggests that a strictly monistic epistemology, whether idealistic or realistic, does not get rid of the problem. Suppose for example we take a sensationalistic idealism. It does away with the ontological gulf between ideas and facts, and by reducing both terms to a common denominator seems to facilitate fruitful discussion of the problem. But the problem of the distinction and reference (agreement, correspondence) of two types or sorts of sensations still persists. If I say the box there is square, and call "box" one of a group of ideas or sensations and "square" another sensation or "idea," the old question comes up. Is "square" already a part of the "facts" of the box, or is it not? If it is, it is a supernumerary, an idle thing, both as an idea and as an assertion of fact, if it is not, how can we compare the two ideas, and what on earth or in heaven does their agreement or correspondence mean? If it means simply that we experience the two "sensations" in juxtaposition, then the same is true, of course, of any casual association or hallucination. On the sensational basis, accordingly, there is still a distinction of something "given," "there," brutally factual, the box, and something else which stands on a different level, ideal, absent, intended, demanded, the "square," which is asserted

to hold good or be true of the thing "box" The fact that both are sensations throws no light on the logical validity of any proposition or belief, because by theory a like statement holds of every possible proposition¹

The same problem recurs on a realistic basis For example, there has recently been propounded² the doctrine of the distinction between relations of space and time and relations of meaning or significance, as a key to the problem of knowledge Things exist in their own characters, in their temporal and spatial relations When knowledge intervenes, there is nothing new of a subjective or psychical sort, but simply a new relation of the things—the suggesting or signifying of one thing by another. Now this seems

¹ Mill's doctrine of the ambiguity of the copula (*Logic*, Book I, chap IV, § 1) is an instance of one typical way of evading the problem After insisting with proper force and clearness upon the objective character of our intellectual beliefs and propositions, viz, that when we say fire causes heat we mean actual phenomena, not our ideas of fire and heat (Book I, chap II and chap XI, § 1, and chap V, § 1), he thinks to dispose of the whole problem of the "is" in judgment by saying that it is only a sign of affirmation (chap I, § 2, and chap IV, § 1) Of course it is But unless the affirmation (the sign of thought) "agrees" or "corresponds with" the relations of the phenomena, what becomes of the doctrine of the objective import of propositions? How otherwise shall we maintain with Mill (and with common-sense and science) the difference between asserting "a fact of external nature" and "a fact in my mental history"?

² *Studies in Philosophy and Psychology*, article by Woodbridge on "The Problem of Consciousness," especially pp 159-60

to be an excellent way of stating the logical problem, but, I take it, it states and does not solve. For the characteristic of such situations, claiming to terminate in knowledge, is precisely that the meaning-relation is predicated *of* the other relations, it is referred to them, it is not simply a supervention existing side by side with them, like casual suggestions or the play of phantasy. It is something which the facts, the qualitative space and time things, must bear the burden of, must accept and take unto themselves as part of themselves. Until this happens, we have only "thinking," not accomplished knowledge. Hence, logically, the existential relations play the rôle of fact, and the relation of signification that of idea,¹ distinguished from fact and yet, if valid, to hold *of* fact.

This appears quite clearly in the following quotation: "It is the ice which means that it will cool the water, just as much as it is the ice which does cool the water when put into it." There is, however, a possible ambiguity in the statement, to which we shall return later. That the "ice" (the thing regarded as ice) *suggests* cooling is as real as is a case of actual cooling. But, of course, not every suggestion is valid. The "ice" may be a crystal, and it will not

¹ In other words, "ideas" is a term capable of assuming any definition which is logically appropriate—say, meaning. It need not have anything to do with the conception of little subjective entities or psychical stuffs.

cool water at all. So far as it is already certain that this is ice, and also certain that ice, under all circumstances, cools water, the meaning-relation stands on the same level as the physical, being not merely suggested, but part of the facts ascertained. It is not a meaning-relation as such at all. We already have truth, the entire work of knowing as logical is done, we have no longer the relation characteristic of reflective situations. Here again the implication of the thinking situation is of some "correspondence" or "agreement" between two sets of distinguished relations, the problem of valid determination remains the central question of any theory of knowing in its relation to facts and truth.¹

II

I hope this statement of the difficulty, however inadequate, will serve at least to indicate that a functional logic inherits the problem in question and does not create it, that it has never for a moment denied the *prima facie* working distinction between "ideas," "thoughts," "meanings," and "facts," "existences," "the environment," nor the necessity of a control of meaning by facts. It is concerned not with denying, but with understanding. What is denied is not the genuineness of the problem of the

¹ Of course, the monistic epistemologies have an advantage in the statement of the problem over the dualistic—they do not state it in terms which presuppose the impossibility of the solution.

terms in which it is stated, but the reality and value of the orthodox interpretation. What is insisted upon is the relative, instrumental, or working character of the distinction—that it *is* a *logical* distinction, instituted and maintained in the interests of intelligence, with all that intelligence imports in the exercise of the life functions. To this positive side I now turn.

In the analysis it may prove convenient to take an illustration of a man lost in the woods, taking this case as typical of any reflective situation in so far as it involves perplexity—a problem to be solved. The problem is to find a correct idea of the way home—a practical idea or plan of action which will lead to success, or the realization of the purpose to get home. Now the critics of the experimental theory of logic make the point that this practical idea, the truth of which is evidenced in the successful meeting of a need, is dependent for its success upon a purely presentative idea, that of the existent environment, whose validity has nothing to do with success but depends on agreement with the given state of affairs. It is said that what makes a man's idea of his environment true is its agreement with the actual environment, and "generally a true idea in any situation consists in its agreement with reality." I have already indicated my acceptance of this formula. But it was long my misfortune not to be possessed offhand of those perfectly clear notions of just what is meant

in this formula by the terms "idea," "existence," and "agreement" which are possessed by other writers on epistemology, and when I analyzed these notions I found the distinction between the practical idea and the theoretical not fixed nor final, and I found a somewhat startling similarity between the notions of "success" and "agreement"

Just what is the environment of which an idea is to be formed i e, what is the intellectual content or objective detail to be assigned to the term "environment"? It can hardly mean the actual visible environment—the trees, rocks, etc, which a man is actually looking at These things are there and it seems superfluous to form an idea of them, moreover, the wayfaring man, though lost, would have to be an unusually perverse fool if under such circumstances he were unable to form an idea (supposing he chose to engage in this luxury) in agreement with these facts The environment must be a larger environment than the visible facts, it must include things not within the direct ken of the lost man, it must, for instance, extend from where he is now to his home, or to the point from which he started It must include unperceived elements in their contrast with the perceived Otherwise the man would not be lost Now we are at once struck with the facts that the lost man has no alternative except either to wander aimlessly or else to *conceive* this inclusive environment, and that this conception is just what is meant by

idea It is not some little psychical entity or piece of consciousness-stuff, but is *the interpretation of the locally present environment in reference to its absent portion*, that part to which it is referred as another part so as to give a view of a whole Just how such an idea would differ from one's plan of action in finding one's way, I do not know For one's plan (if it be really a plan, a method) is a conception of what is given in its hypothetical relations to what is not given, employed as a guide to that act which results in the absent being also given It is a map constructed with one's self lost and one's self found, whether at starting or at home again, as its two limits If this map in its specific character is not also the only guide to the way home, one's only plan of action, then I hope I may never be lost It is the *practical* facts of being lost and desiring to be found which constitute the limits and the content of the "environment"

Then comes the test of *agreement* of the idea and the environment Supposing the individual stands still and attempts to compare his idea with the reality, with what reality is he to compare it? Not with the presented reality, for *that* reality is the reality of himself lost, not with the complete reality, for at this stage of proceedings he has only the idea to stand for the complete theory What kind of comparison is possible or desirable then, save to treat the mental layout of the whole situation as a working hypothesis,

as a plan of action, and proceed to *act* upon it, to use it as a director and controller of one's divagations instead of stumbling blindly around until one is either exhausted or accidentally gets out? Now suppose one uses the idea—that is to say, the present facts projected into a whole in the light of absent facts—as a guide of action. Suppose, by means of its specifications, one works one's way along until one comes upon familiar ground—finds one's self. *Now*, one may say, my idea was right, it was in accord with facts, it agrees with reality. That is, acted upon sincerely, it has led to the desired conclusion, it has, *through action*, worked out the state of things which it contemplated or intended. The agreement, correspondence, is between purpose, plan, and its own execution, fulfillment, between a map of a course constructed for the sake of guiding behavior and the result attained in acting upon the indications of the map. Just how does such agreement differ from success?

III

If we exclude acting upon the idea, no conceivable amount or kind of intellectualistic procedure can confirm or refute an idea, or throw any light upon its validity. How does the non-pragmatic view consider that verification takes place? Does it suppose that we first look a long while at the facts and then a long time at the idea, until by some magical process

the degree and kind of their agreement become visible? Unless there is some such conception as this, what conception of agreement is possible except the experimental or practical one? And if it be admitted that verification involves action, how can that action be relevant to the truth of an idea, unless the idea is itself already relevant to action? If by acting in accordance with the experimental definition of facts, viz, as obstacles and conditions, and the experimental definition of the end or intent, viz, as plan and method of action, a harmonized situation effectually presents itself, we have the adequate and the only conceivable verification of the intellectual factors. If the action indicated be carried out and the disordered or disturbed situation persists, then we have not merely confuted the tentative positions of intelligence, but we have in the very process of acting introduced new data and eliminated some of the old ones, and thus afforded an opportunity for the resurvey of the facts and the revision of the plan of action. By acting faithfully upon an inadequate reflective presentation, we have at least secured the elements for its improvement. This, of course, gives no absolute guaranty that the reflection will at any time be so performed as to prove its validity in fact. But the self-rectification of intellectual content through acting upon it in good faith is the "absolute" of knowledge, loyalty to which is the religion of intellect.

The intellectual definition or delimitation assigned to the "given" is thus as tentative and experimental as that ascribed to the idea. In form both are categorical, and in content both are hypothetical. Facts really exist just as facts, and meanings exist as meanings. One is no more superfluous, more subjective, or less necessitated than the other. In and of themselves as existences both are equally realistic and compulsive. But on the basis of existence, there is no element in either which may be strictly described as intellectual or cognitional. There is only a practical situation in its brute and unrationalized form. What is uncertain about the facts as given at any moment is whether the right exclusions and selections have been made. Since that is a question which can be decided finally only by the experimental issue, this ascription of character is itself tentative and experimental. If it works, the characterization and delineation are found to be proper ones, but every admission prior to inquiry, of unquestioned, categorical, rigid objectivity, compromises the probability that it will work. The character assigned to the datum must be taken as hypothetically as possible in order to preserve the elasticity needed for easy and prompt reconsideration. Any other procedure virtually insists that all facts and details anywhere happening to exist and happening to present themselves (all being equally real) must all be given equal status and equal weight, and that their outer ramifications and

internal complexities must be indefinitely followed up. The worthlessness of this sheer accumulation of realities, its total irrelevancy, the lack of any way of judging the significance of the accumulations, are good proofs of the fallacy of any theory which ascribes objective logical content to facts wholly apart from the needs and possibilities of a situation.

The more stubbornly one maintains the *full* reality of either his facts or his ideas, just as they stand, the more accidental is the discovery of relevantly significant facts and of valid ideas—the more accidental, the less rational, is the issue of the knowledge situation. Due progress is reasonably probable in just the degree in which the meaning, categorical in its existing imperativeness, and the fact, equally categorical in its brute coerciveness, are assigned only a provisional and tentative nature with reference to control of the situation. That this surrender of a rigid and final character for the content of knowledge on the sides both of fact and of meaning, in favor of experimental and functioning estimations, is precisely the change which has marked the development of modern from mediaeval and Greek science, seems undoubted. To learn the lesson one has only to contrast the rigidity of phenomena and conceptions in Greek thought (Platonic ideas, Aristotelian forms) with the modern experimental selection and determining of facts and experimental employment of hypotheses. The former have ceased to be ultimate

realities of a nondescript sort and have become provisional data, the latter have ceased to be eternal meanings and have become working theories. The fruitful application of mathematics and the evolution of a technique of experimental inquiry have coincided with this change. That realities exist independently of their use as intellectual data, and that meanings exist apart from their utilization as hypotheses, are the permanent truths of Greek realism as against the exaggerated subjectivism of modern philosophy, but the conception that this existence is to be defined in the same way as are contents of knowledge, so that perfect being is object of perfect knowledge and imperfect being object of imperfect knowledge, is the fallacy which Greek thought projected into modern. Science has advanced in its methods in just the degree in which it has ceased to assume that prior realities and prior meanings retain fixedly and finally, when entering into reflective situations, the characters they had prior to this entrance, and in which it has realized that their very presence within the knowledge situation signifies that they have to be redefined and revalued from the standpoint of the new situation.

IV

This conception does not, however, commit us to the view that there is any conscious situation which is totally non-reflective. It may be true that any

experience which can properly be termed such comprises something which is *meant* over and against what is given or there. But there are many situations into which the rational factor—the mutual distinction and mutual reference of fact and meaning—enters only incidentally and is slurred, not accentuated. Many disturbances are relatively trivial and induce only a slight and superficial redefinition of contents. This passing tension of facts against meaning may suffice to call up and carry a wide range of meaningful facts which are quite irrelevant to the intellectual problem. Such is the case where the individual is finding his way through any field which is upon the whole familiar, and which, accordingly, requires only an occasional resurvey and revaluation at moments of slight perplexity. We may call these situations, if we will, knowledge situations (for the reflective function characteristic of knowledge is present), but so denominating them does not do away with their sharp difference from those situations in which the critical qualification of facts and definition of meanings constitute the main business. To speak of the passing attention which a traveler has occasionally to give to the indications of his proper path in a fairly familiar and beaten highway as knowledge, in just the same sense in which the deliberate inquiry of a mathematician or a chemist or a logician is knowledge, is as confusing to the real issue involved as would be the denial to it of *any* reflective factor. If, then, one

bears in mind these two considerations—(1) the unique problem and purpose of every reflective situation, and (2) the difference as to range and thoroughness of logical function in different types of reflective situations—one need have no difficulty with the doctrine that the great obstacle in the development of scientific knowing is that facts and meanings enter such situations with stubborn and alien characteristics imported from other situations

This affords an opportunity to speak again of the logical problem to which reference and promise of return were made earlier in this paper. Facts may be regarded as existing qualitatively and in certain spatial and temporal relations, when there is knowledge another relation is added, that of one thing meaning or signifying another. Water exists, for example, as water, in a certain place, in a certain temporal sequence. But it may signify the quenching of thirst, and this signification-relation constitutes knowledge.¹ This statement may be taken in a way congruous with the account developed in this paper. But it may also be taken in another sense, consideration of which will serve to enforce the point

¹ This view was originally advanced in the discussion of quite another problem than the one here discussed, viz., the problem of consciousness, and it may not be quite just to dis sever it from that context. But as a formula for knowledge it has enough similarity with the one brought out in this paper to suggest further treatment, it is not intended that the results reached here shall apply to the problem of consciousness as such.

regarding the tentative nature of the characterization of the given, as distinct from the intended and absent. Water means quenching thirst, it is drunk, and death follows. It was not water, but a poison which "looked like" water. Or it is drunk, and is water, but does not quench thirst, for the drinker is in an abnormal condition and drinking water only intensifies the thirst. Or it is drunk and quenches thirst, but it also brings on typhoid fever, being not merely water, but water plus germs. Now all these events demonstrate that error may appertain quite as much to the characterization of existing things, suggesting or suggested, as to the suggestion *qua* suggestion. There is no ground for giving the "things" any superior reality. In these cases, indeed, it may fairly be said that the mistake is made because qualitative thing and suggested or meaning-relation were *not* discriminated. The "signifying" force was regarded as a part of the direct quality of the given fact, quite as much as its color, liquidity, etc., it is only in another situation that it is discriminated as a relation instead of being regarded as an element.

It is quite as true to say that a thing is called water because it suggests thirst-quenching as to say that it suggests thirst-quenching because it is characterized as water. *The knowledge function becomes prominent or dominant in the degree in which there is a conscious discrimination between the fact-relations and the meaning-relations.* And this inevitably means that the

"water" ceases to be *surely* water, just as it becomes doubtful or hypothetical whether this thing, whatever it is, really means thirst-quenching. If it really means thirst-quenching, it is water, so far as it may not mean it, it perhaps is not water. It is now just as much a question *what* this *is* as what it means. Whatever will resolve one question will resolve the other. In just the degree, then, in which an existence or thing gets intellectualized force or function, it becomes a fragmentary and dubious thing, to be circumscribed and described for the sake of operating as *sign*, or clue of a *future* reality to be realized through action. Only as "reality" is reduced to a sign, and questions of its nature as sign are considered, does it get intellectual or cognitional status. The bearing of this upon the question of practical character of the distinctions of fact and idea is obvious. No one, I take it, would deny that action of some sort *does* follow upon judgment, no one would deny that this action *does* somehow serve to test the value of the intellectual operations upon which it follows. But if this subsequent action is *merely* subsequent, if the intellectual categories, operations, and distinctions are complete in themselves, without inherent reference to it, what guaranty is there that they pass into relevant action, and by what miracle does the action manage to test the worth of the idea? But if the intellectual identification and description of the thing are as tentative and instrumental as is the ascription of significance,

then the exigencies of the active situation are operative in all the categories of the knowledge situation. Action is not a more or less accidental appendage or afterthought, but is undergoing development and giving direction in the entire knowledge function.

In conclusion, I remark that the ease with which the practical character of these fundamental logical categories, fact, meaning, and agreement, may be overlooked or denied is due to the organic way in which practical import is incarnate in them. It can be overlooked because it is so involved in the terms themselves that it is assumed at every turn. The pragmatist is in the position of one who is charged with denying the existence of something because, in pointing out a certain fundamental feature of it, he puts it in a strange light. Such confusion always occurs when the familiar is brought to definition. The difficulties are more psychological—difficulties of orientation and mental adjustment—than logical, and in the long run will be done away with by our getting used to the different viewpoint, rather than by argument.

IX

NAÏVE REALISM VS. PRESENTATIVE REALISM¹

I

In spite of the elucidations of contemporary realists, a number of idealists continue to adduce in behalf of idealism certain facts having an obvious physical nature and explanation. The visible convergence of the railway tracks, for example, is cited as evidence that what is seen is a mental "content." Yet this convergence follows from the physical properties of light and a lens, and is physically demonstrated in a camera. Is the photograph, then, to be conceived as a psychical somewhat? That the time of the visibility of a light does not coincide with the time at which a distant body emitted the light is employed to support a similar idealistic conclusion, in spite of the fact that the exact difference in time may be deduced

¹ I am indebted to Dr. Bush's article on "Knowledge and Perception," *Journal of Philosophy, Psychology, and Scientific Methods*, Vol. VI, p. 393, and to Professor Woodbridge's article on "Perception and Epistemology" in the *James Memorial Volume*, as well as to his paper on "Sensations," read at the 1910 meeting of the American Philosophical Association. Since my point of departure and aim are somewhat different, I make this general acknowledgment in lieu of more specific references.

from a physical property of light—its rate. The dislocation in space of the light seen and the astronomical star is used as evidence of the mental nature of the former, though the exact angular difference is a matter of simple computation from purely physical data. The doubling of images of, say, the finger when the eyeball is pressed, is frequently proffered as a clincher. Yet it is a simple matter to take any body that reflects light, and by a suitable arrangement of lenses to produce not only two but many images, projected into space. If the fact that under definite *physical* conditions (misplacement of lenses), a finger yields two images proves the psychical character of the latter, then the fact that under certain conditions a sounding body yields one or more echoes is, by parity of reasoning, proof that the echo is made of mental stuff.¹

If, once more, the differences in form and color of a table to different observers, occupying different physical positions, is proof that what each sees is a psychical, private, isolated somewhat, then the fact that one and the same physical body has different effects upon, or relations with, different physical media is proof

¹ Plato's use of shadows, of reflections in the water, and other "images" or "imitations" to prove the presence in nature of non-being was, considering the state of physical science in his day, a much more sensible conclusion than the modern use of certain images as proof that the object in perception is a psychical content. Hobbes expressly treats all images as physical, as on the same plane as reflections in the water and echoes, the comparison is his.

of the mental nature of these effects. Take a lump of wax and subject it to the same heat, located at different positions, now the wax is solid, now liquid—it might even be gaseous. How “psychical” these phenomena! It almost seems as if the transformation of the physical into the mental in the cases cited exemplifies an interesting psychological phenomenon. In each case the beginning is with a real and physical existence. Taking “the real object,” the astronomical star, on the basis of its physical reality, the idealist concludes to a psychical object, radically different! Taking the *single* object, the finger, from the premise of its real singleness, he concludes to a double mental content, which then takes the place of the original single thing! Taking one-and-the-same-object, the table, presenting *its* different surfaces and reflections of light to different real organisms, he eliminates the one-table-in-its-different-relations in behalf of a multiplicity of totally separate psychical tables! The logic reminds us of the story of the countryman who, after gazing at the giraffe, remarked, “There ain’t no such animal.” It almost seems, I repeat, as if this self-contradiction in the argument creates in some minds the impression that the object—not the argument—is undergoing the extraordinary reversal of form.

However this may be, the problem indicated in the foregoing cases is simply the good old problem of the many in one, or, less cryptically, the problem of the maintenance of a continuity of process throughout

differences I do not pretend that this situation, though the most familiar thing in life, is wholly without difficulties. But its difficulty is not one of epistemology, that is, of the relation of known to a knower, to take it as such, and then to use it as proof of the psychical nature of a final term, is also to prove that the trail the rocket stick leaves behind is psychical, or that the flower which comes in a continuity of process from a seed is mental.

II

Contemporary realists have so frequently and clearly expounded the physical explanation of such cases as have been cited that one is at a loss as to why idealists go on repeating the cases without even alluding to the realistic explanation. One is moved to wonder whether this neglect is just one of those circumstances which persistently dog philosophical discussions, or whether something in the realistic position gives ground (from at least an *ad hominem* point of view) for the neglect. There is a reason for adopting the latter alternative. Many realists, in offering the type of explanation adduced above, have treated the cases of seen light, doubled imagery, as perception in a way that ascribes to perception an inherent cognitive status. They have treated the perceptions as *cases of knowledge*, instead of as simply natural events having, in themselves (apart from a *use* that may be made of them), no more knowledge status or worth

than, say, a shower or a fever. What I intend to show is that if "perceptions" are regarded as cases of knowledge, the gate is opened to the idealistic interpretation. The physical explanation holds of them as long as they are regarded simply as natural events—a doctrine I shall call naive realism, it does not hold of them considered as cases of knowledge—the view I call presentative realism.

The idealists attribute to the realists the doctrine that "the perceived object is the real object." Please note the wording, it assumes that there is *the* real object, something which stands in a contrasting relation with objects not real or else less real. Since it is easily demonstrable that there is a numerical duplicity between the astronomical star and its effect of visible light, between the single finger and the doubled images, the latter evidently, when the former is dubbed "*the*" real object, stands in disparaging contrast to its reality. If it is a case of knowledge, the knowledge refers to the star, and yet not the star, but something more or less unreal (that is, if the star be "*the*" real object), is known.

Consider how simply the matter stands in what I have called naive realism. The astronomical star is a real object, but not "*the*" real object, the visible light is another real object, found, when knowledge supervenes, to be an occurrence standing in a process continuous with the star. Since the seen light is an event within a continuous process, there is no point

of view from which its "reality" contrasts with that of the star

But suppose that the realist accepts the traditional psychology according to which every event in the way of a perception is also a case of knowing something. Is the way out now so simple? In the case of the doubled fingers or the seen light, the thing known in perception contrasts with the physical source and cause of the knowledge. There *is* a numerical duplicity. Moreover the thing known by perception is by this hypothesis in relation to a knower, while the physical cause is not. Is not the most plausible account of the difference between the physical cause of the perceptive knowledge and what the latter presents precisely this latter difference—namely, presentation to a knower? If perception is a case of knowing, it must be a case of knowing the star, but since the "real" star is not known in the perception, the knowledge relation must somehow have changed the "object" into a "content." Thus when the realist conceives the perceptual occurrence as an intrinsic case of knowledge or of presentation to a mind or knower, he lets the nose of the idealist camel into the tent. He has then no great cause for surprise when the camel comes in—and devours the tent.

Perhaps it will seem as if in this last paragraph I had gone back on what I said earlier regarding the physical explanation of the difference between the

visible light and the astronomical star On the contrary, my point is that this explanation, though wholly adequate as long as we conceive the perception to be itself simply a natural event, is not at all available when we conceive it to be an attempt at knowing its cause In the former case, we are dealing with a relation between natural events In the latter case, we are dealing with the difference between an object as a cause of knowledge and an object as known, and hence in relation to mind By the "method of difference" the sole explanation of the difference between the two objects is then the absence or presence of relation to a knower

In the case of the seen light,¹ reference to the velocity of light is quite adequate to account for its time and space differences from the star But viewed as a case of what is known (on the supposition that perception is knowing), reference to it only increases the contrast between the real object and the object known in perception For, being just as much a part of the object that causes the perception as is the star itself, it (the velocity of light) *ought* logically to be part of what is known in the perception, while it is

¹ It is impossible, in this brief treatment, to forestall every misapprehension and objection Yet to many the use of the term "seen" will appear to be an admission that a case of knowledge is involved But is smelling a case of knowledge? Or (if the superstition persists as to smell) is gnawing or poking a case of knowledge? My point, of course, is that "seen" involves a relation to organic activity, not to a knower, or mind

not. Since the velocity of light is a constituent element in the star, it should be known in the perception, since it is not so known, reference to it only increases the discrepancy between the object of the perception—the seen light—and the real, astronomical star. The same is true of any physical condition that might be referred to. *The very things that, from the standpoint of perception as a natural event, are conditions that account for its happening are, from the standpoint of perception as a case of knowledge, part of the object which, if knowledge is to be valid, ought to be known, but is not*

In this fact we have, perhaps, the ground of the idealist's disregard of the oft-proffered physical explanation of the difference between the perceptual event and *the* (so-called) real object. And it is quite possible that some realists who read these lines will feel that in my last paragraphs I have been making a covert argument for idealism. Not so, I repeat, they are an argument for a truly naive realism. The presentative realist, in his appeal to "common-sense" and the "plain man," first sophisticates the umpire and then appeals. He stops a good way short of a genuine naiveté. The plain man, for a surety, does not regard noises heard, lights seen, etc., as mental existences, but neither does he regard them as things *known*. That they are just things is good enough for him. That they are in relation to mind, or in relation to mind as their "knower," no more occurs to

him than that they are mental By this I mean much more than that the formulae of epistemology are foreign to him; I mean that his attitude to these things *as* things involves their *not* being in relation to him as a mind or a knower He is in the attitude of a liker or hater, a doer or an appreciator When he takes the attitude of a knower he begins to inquire Once depart from thorough naiveté, and substitute for it the psychological theory that perception is a cognitive presentation to a mind of a causal object, and the first step is taken on the road which ends in an idealistic system

III

For simplicity's sake, I have written as if my main problem were to show how, in the face of a supposed difficulty, a strictly realistic theory of the perceptual event may be maintained But my interest is primarily in the facts, and in the theory only because of the facts it formulates The significance of the facts of the case may, perhaps, be indicated by a consideration which has thus far been ignored In regarding a perception as a case of knowledge, the presentative realist does more than shove into it a relation to mind which then, naturally and inevitably, becomes the explanation of any differences that exist between its subject-matter and some causal object with which it contrasts In many cases—very important cases, too, in the physical sciences—the con-

trasting "real object" becomes known by a logical process, by inference—as the contemporary position of the star is determined by calculations from data, not by perception. Thus, then, is the situation of the presentative realist. If perception is knowledge of its cause, it stands in unfavorable contrast with another indirect mode of knowledge, *its* object is less valid than the object of inference. I do not adduce these considerations as showing that the case is hopeless for the presentative realist,¹ I am willing to concede he can find a satisfactory way out. But the difficulty exists, and in existing it calls emphatic attention to a case which is certainly and indisputably a case of knowledge—namely, propositions arrived at through inference, judgments as logical assertions.

With relation to the unquestionable case of knowledge, the logical or inferential case, perceptions occupy a unique status, one which readily accounts for their being regarded as cases of knowledge, although in themselves they are natural events. (i) They are the sole ultimate data, the sole media, of inference to all natural objects and processes. While we do not, in any intelligible or verifiable sense, know *them*, we know all things that we do know *with* or *by* them. They furnish the only ultimate evidence of the

¹ This is the phase of the matter, of course, which the rationalistic or objective realist, the realist of the type of T. H. Green, emphasizes. Put in terms of systems, the difficulty is that in escaping the subjectivism latent in treating perception as a case of knowledge, the realist runs into the waiting arms of the objective idealist.

existence and nature of the objects which we infer, and they are the sole ultimate checks and tests of the inferences. The visible light is a necessary part of the evidence on the basis of which we infer the existence, place, and structure of the astronomical star, and some other perception is the verifying check on the value of the inference. Because of this characteristic use of perceptions, the perceptions themselves acquire, by "second intention," a knowledge status. They *become* objects of minute, accurate, and experimental scrutiny. Since the body of propositions that forms natural science hangs upon them, *for scientific purposes* their nature *as* evidence, *as* signs, entirely overshadows their natural status, that of being simply natural events. The scientific man, as scientific, cares for perceptions not in themselves, but as they throw light upon the nature of some object reached by evidence. And since every such inference tries to terminate in a further perception (as its test of validity), the value of inferential knowing depends on perception. (2) Independently of science, daily life uses perceptions as signs of other perceptions. When a perception of a certain kind frequently recurs and is constantly used as evidence of some other impending perceptual event, the function of habit (a natural function, be it noted, not a psychical or epistemological function) often brings it about that the perception loses its original quality in acquiring a sign-value. Language is, of course, the typical case.

Noises, in themselves mere natural events, through habitual use as signs of other natural events become integrated with what they mean. What they stand for is telescoped, as it were, into what they are. This happens also with other natural events, colors, tastes, etc. Thus, *for practical purposes*, many perceptual events are cases of knowledge, that is, they have been *used* as such so often that the habit of so using them is established or automatic.

In this brief reference to facts that are perfectly familiar, I have tried to suggest three points of crucial importance for a naïve realism: first, that inferential or evidential knowledge (that involving logical relation) is in the field as an obvious and undisputed case of knowledge; second, that this function, although embodying the logical relation, is itself a natural and specifically detectable process among natural things—it is not a non-natural or epistemological relation; third, that the *use*, practical and scientific, of perceptual events in the evidential or inferential function is such as to make them *become* objects of inquiry and limits of knowledge, and to such a degree that this acquired characteristic quite overshadows, in many cases, their primary nature.

If we add to what has been said the fact that, like every natural function, the inferential function turns out better in some cases and worse in others, we get a naturalistic or naively realistic conception of the "*problem of knowledge*." Control of the conditions

of inference—the only type of knowledge detectable in direct existence—so as to guide it toward better conclusions

IV

I do not flatter myself that I will receive much gratitude from realists for attempting to rescue them from that error of fact which exposes their doctrine to an idealistic interpretation. The superstition, growing up in a false physics and physiology and perpetuated by psychology, that sensations-perceptions are cases of knowledge, is too ingrained. But—*crede experto*—let them try the experiment of conceiving perceptions as pure natural events, not as cases of awareness or apprehension, and they will be surprised to see how little they miss—save the burden of carrying traditionary problems. Meantime, while philosophic argument, such as this, will do little to change the state of belief regarding perceptions, the development of biology and the refinement of physiology will, in due season, do the work.

In concluding my article, I ought to refer, in order to guard against misapprehension, to a reply that the presentative realist might make to my objection. He might say that while the seen light is a case of knowledge or presentative awareness, it is not a case of knowledge of the star, but simply of the seen light, just as it is. In this case the appeal to the physical explanations of the difference of the seen light from its

objective source is quite legitimate. At first sight, such a position seems innocent and tenable. Even if innocent, it would, however, be ungrounded, since there is no evidence of the existence of a knower, and of its relation to the seen light. But further consideration will reveal that there is a most fundamental objection. If the notion of perception as a case of adequate knowledge of its own object-matter be accepted, the knowledge relation is absolutely ubiquitous, it is an all-inclusive net. The "ego-centric predicament" is inevitable. This result of making perception a case of knowing will now occupy us.

X

EPISTEMOLOGICAL REALISM THE ALLEGED UBIQUITY OF THE KNOWL EDGE RELATION

I have pointed out that if perception be treated as a case of knowledge, knowledge of every form and kind must be treated as a case of a presentation to a knower. The alleged discipline of epistemology is then inevitable. In common usage, the term "knowledge" tends to be employed eulogistically, its meaning approaches the connotation of the term "science." More loosely, it is used, of course, to designate all beliefs and propositions that are held with assurance, especially with the implication that the assurance is reasonable, or grounded. In its practical sense, it is used as the equivalent of "knowing *how*," of skill or ability involving such acquaintance with things and persons as enables one to anticipate how they behave under certain conditions and to take steps accordingly. Such usages of the term are all differential, they all involve definite contrasts—with ungrounded conviction, or with doubt and mere guess-work, or with the inexpertness that accompanies lack of familiarity. In its epistemological use, the term "knowledge" has a blanket value which is

absolutely unknown in common life. It covers any and every "presentation" of any and every thing to a knower, to an "awarer," if I may coin a word for the sake of avoiding some of the pitfalls of the term "consciousness." And, I repeat, this indiscriminate use of the term "knowledge," so foreign to science and daily life, is absolutely unavoidable if perception be regarded as, in itself, a mode of knowledge. And then—and only then—the problem of "the possibility, nature, and extent of knowledge *in general*" is also inevitable. I hope I shall not be regarded as offensively pragmatic if I suggest that this undesirable consequence is a good reason for not accepting the premise from which it follows, unless that premise be absolutely forced upon us.

At all events, upon the supposition of the ubiquity of the knowledge relation in respect to a self, presentative realism is compelled to accept the genuineness of the epistemological problem, and thus to convert itself into an epistemological realism, getting one more step away from both naïve and naturalistic realism. The problem is especially acute for a presentative realism because idealism has made precisely this ubiquity of relationship its axiom, its short-cut. One sample is as good as a thousand. Says Bain: "There is no possible knowledge of a world except in relation to our minds. Knowledge means a state of mind, the notion of material things is a mental fact. We are incapable even of discussing the

existence of an independent material world, the very act is a contradiction. We can speak only of a world presented to our own minds."

On the supposition of the ubiquity of the relation, realism and idealism exhaust the alternatives, if the ubiquity of the relation is a myth, both doctrines are unreal, because there is no problem of which they are the solution. My first step in indicating the unreality of both "solutions" is formal. I shall try to show that *if* the knowledge relation of things to a self is the exhaustive and inclusive relation, there is no intelligible point at issue between idealism and realism, the differences between them are either verbal or else due to a failure on the part of one or the other to stick to their *common* premise.

I

To my mind, Professor Perry rendered philosophic discussion a real service when he coined the phrase "ego-centric predicament." The phrase designated something which, whether or no it be real in itself, is very real in current discussion, and designating it rendered it more accessible to examination. In terming the alleged uniform complicity of a knower a predicament, it is intended, I take it, to suggest, among other things, that we have here a difficulty with which all schools of thought alike must reckon, so that it is a difficulty that cannot be used as an argument in behalf of one school and against another.

If the relation be ubiquitous, it affects alike every view, every theory, every object experienced, it is no respecter of persons, no respecter of doctrines. Since it cannot make any difference to any particular object, to any particular logical assertion, or to any particular theory, it does not support an idealistic as against a realistic theory. Being a universal common denominator of all theories, it cancels out of all of them alike. It leaves the issue one of *subject-matter*, to be decided on the basis of that subject-matter, not on the basis of an unescapable attendant consideration that the subject-matter must be known in order to be discussed. In short, the moral is quite literally, "Forget it," or "Cut it out."

But the idealist may be imagined to reply somewhat as follows. "If the ubiquity were of any kind other than precisely the kind it is, the advice to disregard it as a mere attendant circumstance of discussion would be relevant. Thus, for example, we disregard gravitation when we are considering a particular chemical reaction, there is no ground for supposing that it affects a reaction in any way that modifies it as a chemical reaction. And if the 'ego-centric' relation were cited when the point at issue is something about one group of facts in distinction from another group, it ought certainly to be canceled from any statement about them. But since the point at issue is precisely the most universally defining trait of existence as known, the invitation deliberately

to disregard the most universal trait is nothing more or less than an invitation to philosophic suicide "

If the idealist I have imagined as making the foregoing retort were up in recent realistic literature, he might add the following argument *ad hominem* "You, my realistic opponent, say that the doctrine of the external relation of terms expresses a ubiquitous mark of every genuine proposition or relational complex, and that this ubiquity is a strong presumption in favor of realism Why so uneven, so partial, in your attitude toward ubiquitous relations? Is it perchance that you were so uneasy at our possession of a ubiquitous relation that gives a short cut to idealism that you felt you must also have a short cut to realism?"

If I terminate the controversy at this point, it is not because I think the realist is unable to "come back " On the contrary, I stop here because I believe (for reasons that will come out shortly) that both realist and idealist, having the same primary assumption, can come back at each other indefinitely Consequently, I wish to employ the existence of this *tu quoque* controversy to raise the question Under what conditions is the relation of knower to known an intelligible question? And I wish to show that it is *not* intelligible, if the knowledge relation be ubiquitous and homogeneous

The controversy back and forth is in fact a warning of each side by the other not to depart from their

common premise If the idealist begins to argue (as he constantly does) as if the relation to "mind" or to "consciousness" made some difference of a specific sort, like that between error and fact, or between sound perception and hallucination, he may be reminded that, since this relation is uniform, it substantiates and nullifies all things alike And the realist is quite within the common premise when he points out that every special fact must be admitted for what it is specifically known to be, no idealistic doctrine can turn the edge of the fact that knowledge has evolved historically out of a state in which there was no mind, or of the fact that knowledge is even now dependent on the brain, provided that specific evidence shows these to be facts The realist, on the other hand, must admit that, after all, the entire body of known facts, or of science, including such facts as the above, is held fast and tight in the net of relation to a mind or consciousness In specific cases this relation may be ignored, but the exact ground for such an ignoring is precisely that the relation is not a specific fact, but a uniform relation of facts And to call it an external relation makes no practical difference if it is universal and uniform So the idealist might reply

Imagine a situation like the following The sole relation an organism bears to things is that of eater, the sole relation the environment bears to the organism is that of food, that is, things-to-eat This

relation, then, is exhaustive. It defines, or identifies, each term in relation to the other. But this means that there are not, as respects organism and environment, two terms at all. Eater-of-food and food-being-eaten are two names for one and the same situation. Could there be imagined a greater absurdity than to set to work to discuss the relation *of* eater *to* food, *of* organism *to* the environment, or to argue as to whether one modifies the other or not? Given the premise, the statements in such a discussion could have only a verbal difference from one another.

Suppose, however, the discussion has somehow got under way. Sides have been taken, the philosophical world is divided into two great camps, "foodists" and "eaterists." The eaterists (idealists) contend that no object exists except in relation to eating, hence that everything is constituted a thing by its relation to eating. Special sciences exist indeed which discuss the nature of various sorts of things in relation to *one another*, and hence in legitimate abstraction from the fact that they are all foods. But the discussion of their nature *an sich* depends upon "eatology," which deals primarily with the problem of the possibility, nature, and extent (or limits) of eating food in general, and thereby determines what food in general, *uberhaupt*, is and means.

Nay, replies the foodist (realist). Since the eating relation is uniform, it is negligible. All propositions which have any intelligible meaning are about

objects just as they are, and in the relations they bear to one another. Foods pass in and out of the relation to eater with no change in their own traits. Moreover, the position of the eaterists is self-contradictory. How can a thing be eaten unless it *is*, in and of itself, a food? To suppose that a food is constituted by eating is to presuppose that eating eats eating, and so on in infinite regress. In short, to be an eater is to be an eater of food, take away the independent existence of foods, and you deny the existence and the possibility of an eater.

I respectfully submit that there is no terminus to such a discussion. For either both sides are saying the same thing in different words, or else both of them depart from their common premise, and unwittingly smuggle in some relations between the organism and environment other than that of food-eater. If to be an eater means that an organism which is more and other than an eater is doing something *distinctive*, because contrasting with its other functions, in eating then, and then only, is there an issue. In this latter case, the thing which is food may, of course, be *proved* to be something besides food, because of some different relation to the organism than that of eating. But if both stick consistently to their common premise, we get the following trivial situation. The idealist says "Every philosophy purports to be knowledge, knowledge of objects, all knowledge implies relation to mind, therefore every object with which

philosophy deals is object-in-relation-to-mind " The realist says "To be a mind is to be a knower, to be a knower is to be a knower-of-objects Without the objects to be known, mind, the knower, is and means nothing "

The difficulties attending the discussion of epistemology are in no way attendant upon the special subject-matter of "epistemology " They are found wherever any reciprocal relation is taken to define, exclusively and exhaustively, all the connections between any pair of things If there are two things that stand solely as buyer and seller to each other, or as husband and wife, then that relation is "unique," and undefinable, to discuss the relation *of* the relation *to* the terms of which it is the relation, is an obvious absurdity, to assert that the relation does *not* modify the "seller," the "wife," or the "object known," is to discuss the relation *of* the relation just as much as to assert the opposite The only reason, I think, why anyone has ever supposed the case of knower-known to differ from any case of an alleged exhaustive and exclusive correlation is that while the knower is only one—just knower—the objects known are obviously many, and sustain many relations to one another which vary independently of their relation to the knower This is the undoubted fact at the bottom of epistemological realism But the idealist is entitled to reply that the objects in their variable relations to one another nevertheless fall within a

relation to a knower, *as long as* that relation is regarded by both as exhaustive or ubiquitous.

II

Nevertheless, I do not conceive that the realistic assertion and the idealistic assertion in this dilemma stand on the same level, or have the same value. The fact that objects vary in relation to one another independently of their relation to the "knower" *is* a fact, and a fact recognized by all schools. The idealistic assertion rests simply upon the presupposition of the ubiquity of the knowledge relation, and consequently has only an *ad hominem* force, that is a force as against epistemological realists—against those who admit that the sole and exhaustive relation of the "self" or "ego" to objects is that of knower of them.¹

¹ Professor Perry says (*The New Realism*, p. 115) "Professor Dewey is mistaken in supposing that realism assumes '*the ubiquity of the knowledge-relation*'." Realism does not argue from the 'ego-centric predicament,' i.e., from the bare presence of the knowledge-relation in all cases of knowledge." If the text has not made my point clear, it is probably too much to expect that a footnote will do so. But I have not accused the realist of arguing from the ego-centric predicament. I have said that *if* any realist holds that the sole and exclusive relation of the one who is knower to things is that of being their knower, then the realist cannot *escape* the impact of the predicament. But if the one who knows things also stands in other connections with them, then it is possible to make an intelligible contrast between things as known and things as loved or hated or appreciated, or seen or heard or whatever. The argument, it should be noted, stands in connection with that of the last section as to whether hearing a sound and seeing a color are of themselves (apart from the use made of them in inference) cases of knowledge. It is

The relation of buyer and seller is a discussable relation, for buyer does not exhaust one party and seller does not exhaust the other. Each is a man or a woman, a consumer or a producer or a middleman, a green-grocer or a dry-goods merchant, a taxpayer or a voter, and so on indefinitely. Nor is it true that such additional relations are borne merely to *other* things, the buyer-sellers are more than and other than buyer-seller to *each other*. They may be fellow-clubmen, belong to opposite political parties, dislike each other's looks, and be second cousins. Hence

significant that Perry holds (*New Realism*, p. 150) that "sensing" is *per se* a case of knowing. Hence it must be in relation to a knower, it must fall within the "predicament," for "it makes the mind aware of a characteristic of the environment." That it is *used* (or may be used) to make us aware of some characteristic of the environment, I of course hold. To say that it *is* an awareness by the mind of a characteristic of the environment is at once to involve a philosopher immediately in the discussion of whether red qualities, or only certain vibrations, are "really" characteristics of the environment. Then, when the authority of physics is invoked in behalf of the latter proposition, the epistemologist (however realistic in his intention) is forced to consider color as a misapprehension of the environment, a case of error or illusion, while the idealist triumphantly flourishes it as a case of the transformative or constitutive efficacy of "mind" in knowing. But if the color is simply a natural event, and if "mind" does not enter except when color is made the basis of inference to some characteristic of the environment, then there is no predicament, and there is no problem of error save as a false inference is made. Moreover, since errors in inference are an undoubted fact, the principle that entities are not to be multiplied beyond need gives a *prima facie* superiority to any theory which connects all error with inference till adequate evidence to the contrary is produced.

the buyer-seller relation stands in intelligent connection and contrast with other relations, so that it can be discriminated, defined, analyzed. Moreover, there are specific differences *in* the buying-selling relation. Because it is not ubiquitous, it is not homogeneous. If wealthy and a householder, the one who buys is a different buyer—i.e., buys differently—than if poor and a boarder. Consequently, the seller sells differently, has more or less goods left to sell, more or less income to expend on other things, and so on indefinitely. Moreover, in order to be a buyer the man has to *have been* other things, i.e., he is not a buyer *per se*, but *becomes* a buyer because he is an eater, wears clothes, is married, etc.

It is also quite clear that the organism is something else than an eater, or something in relation to food alone. I will not again call the roll of perfectly familiar facts, I will lessen my appeal to the reader's patience by confining my reiteration to one point. Even in relation to the things that are food, the organism is something more than their eater. He is their acquirer, their pursuer, their cultivator, their beholder, taster, etc., he *becomes* their eater *only* because he is so many other things, and his becoming an eater is a natural episode in the natural unfolding of these other things.

Precisely the same sort of assertions may be made about the knower-known relation. If the one who is knower is something else and more than the knower

of objects, and if objects are, *in relation to the one who knows them*, something else and other than things in a knowledge relation, there is somewhat to define and discuss, otherwise we are raising, as we have already seen, the quite foolish question as to what is the relation of a relation to itself, or the equally foolish question of whether being a thing modifies the thing that it is. And, moreover, epistemological realism and idealism both say the same thing: realism that a thing does not modify itself, idealism that, since the thing is what it is, it stands in the relation that it does stand in.

There are many facts which, *prima facie*, support the claim that knowing is a connection of things which depends upon other and more primary connections between a self and things, a connection which grows out of these more fundamental connections and which operates in their interests at specifiable crises. I will not repeat what is so generally admitted and so little taken into account, that knowing is, biologically, a differentiation of organic behavior, but will cite some facts that are even more obvious and even more neglected.

1 If we take a case of perception, we find upon analysis that, so far as a self or organism is concerned in it at all, the self is, so to say, inside of it rather than outside of it. It would be much more correct to say that a self is contained in a perception than that a perception is presented to a self. That is to say, the or-

ganism is involved in the occurrence of the perception in the same sort of way that hydrogen is involved in the happening—producing—of water. We might about as well talk of the production of a specimen of water as a presentation of water to hydrogen as talk in the way we are only too accustomed to talk about perceptions and the organism. When we consider a perception as a case of "apperception," the same thing holds good. Habits enter into the *constitution* of the situation, they are in and of it, not, so far as it is concerned, something outside of it. Here, if you please, is a unique relation of self and things, but it is unique not in being wholly incomparable to all natural relations among events, but in the sense of being distinctive or just the relation that it is.

2 Taking the many cases where the self may be said, in an intelligible sense, to lie *outside* a thing and hence to have dealings with it, we find that they are extensively and primarily cases where the self is agent-patient, doer, sufferer, and enjoyer. This means, of course, that things, the things that later come to be known, are primarily not objects of awareness, but causes of weal and woe, things to get and things to avoid, means and obstacles, tools and results. To a naïve spectator, the ordinary assumption that a thing is "in" experience only when it is an object of awareness (or even only when a perception), is nothing less than extraordinary. The self experiences whatever it undergoes, and there is no fact about life

more assured or more tragic than that what we are aware of is determined by things that we are undergoing but of which we are not conscious and which we cannot be conscious of under the particular conditions

3 So far as the question of the relation of the self to known objects is concerned, knowing is but one special case of the agent-patient, of the behavior-enjoyer-sufferer situation. It is, however, the case constantly increasing in relative importance. The connections of the self with things by way of weal or woe are progressively found to depend upon the connections established in knowing things, on the other hand, the progress, the advance, of science is found to depend more and more upon the courage and patience of the agent in making the widening and buttressing of knowledge a business.

It is impossible to overstate the significance, the reality, of the relation of self as knower to things when it is thought of as a *moral* relation, a deliberate and responsible undertaking of a self. Ultimately the modern insistence upon the self in reference to knowledge (in contrast with the classic Greek view) will be found to reside precisely here.

My purpose in citing the foregoing facts is not to prove a positive point, viz, that there are many relations of self and things, of which knowing is but one differentiated case. It concerns something less obvious viz, showing what is meant by saying that

the problems at issue concern matters of fact, and are not matters to be decided by assumption, definition, and deduction. I mean also to suggest what kind of matters of fact would naturally be adduced as evidential in such a discussion. Negatively put, my point is that the whole question of the relation of knower to known is radically misconceived in what passes as epistemology, because of an underlying unexamined assumption, an assumption which, moreover, when examined, makes the controversy verbal or absurd. Positively put, my point is that since, *prima facie*, plenty of connections other than the knower-known one exist between self and things, there is a context in which the "problem" of their relation concerns matters of fact capable of empirical determination by matter-of-fact inquiry. The point about a difference being made (or rather making) in things when known is precisely of this sort.

III

That question is not, *save upon the assumption of the ubiquity of the knowledge relation*, the absurd question of whether knowledge makes any difference to things already known or to things *as* knowledge-objects, *as* facts or truths. Until the epistemological realists have seriously considered the main propositions of the pragmatic realists, viz., that knowing is something that happens to things in the natural course of their career, not the sudden introduction of a "unique"

non-natural type of relation—that to a mind or consciousness—they are hardly in a position to discuss the second and derived pragmatic proposition that, in this natural continuity, things in becoming known undergo a specific and detectable qualitative change

I had occasion earlier to remark that if one identifies “knowledge” with situations involving the function of inference, the *problem* of knowledge means the art of guiding this function most effectively. That statement holds when we take knowledge as a relation of the things *in* the knowledge situation. If we are once convinced of the artificiality of the notion that the knowledge relation is ubiquitous, there will be an existential problem as to the self and knowledge, but it will be a radically different problem from that discussed in epistemology. The relation of knowing to existence will be recognized to form the subject-matter of no problem, because involving an ungrounded and even absurd preconception. But the problem of the relation of an existence in the way of knowing to other existences—or events—with which it forms a continuous process will then be seen to be a natural problem to be attacked by natural methods

XI

THE EXISTENCE OF THE WORLD AS A LOGICAL PROBLEM

Of the two parts of this paper the first is a study in formal analysis. It attempts to show that there is no problem, logically speaking, of the existence of an external world. Its point is to show that the very attempt to state the problem involves a self-contradiction—that the terms cannot be stated so as to generate a problem without assuming what is professedly brought into question. The second part is a summary endeavor to state the actual question which has given rise to the unreal problem and the conditions which have led to its being misconstrued. So far as subject-matter is concerned, it supplements the first part, but the argument of the first part in no way depends upon anything said in the second. The latter may be false and its falsity have no implications for the first.

I

There are many ways of stating the problem of the existence of an external world. I shall make that of Mr. Bertrand Russell the basis of my examinations, as it is set forth in his recent book *Our Knowledge of the External World as a Field for Scientific Method in Philosophy*. I do this both because his statement is

one recently made in a book of commanding importance, and because it seems to me to be a more careful statement than most of those in vogue. If my point can be made out for his statement, it will apply, a fortiori, to other statements. Even if there be those to whom this does not seem to be the case, it will be admitted that my analysis must begin somewhere. I cannot take the space to repeat the analysis in application to differing modes of statement with a view to showing that the method employed will yield like results in all cases. But I take the liberty of throwing the burden upon the reader and asking him to show cause why it does not so apply.

After rejecting certain familiar formulations of the question because they employ the not easily definable notions of the self and independence, Mr. Russell makes the following formulation: Can we "know that objects of sense exist at times when we are not perceiving them?" (*op cit*, p. 75). Or, in another mode of statement: "Can the existence of anything other than our own¹ hard data be inferred from the existence of those data?" (pp. 73 and 83).

I shall try to show that identification of the "data of sense" as the sort of term which will generate the problem involves an affirmative answer to the question—that it must have been answered in the affirmative be-

¹ I shall pass over the terms "our own" so far as specific reference is concerned, but the method employed applies equally to them. Who are the "we," and what does "own" mean, and how is ownership established?

fore the question can be asked. And this, I take it, is to say that it is not a question at all. A point of departure may be found in the following passage: "I think it must be admitted as probable that the immediate objects of sense depend for their existence upon physiological conditions in ourselves, and that, for example, the colored surfaces which we see cease to exist when we shut our eyes" (p. 64). I have not quoted the passage for the sake of gaining an easy victory by pointing out that this statement involves the existence of physiological conditions. For Mr. Russell himself affirms that fact. As he points out, such arguments assume precisely the "common sense world of stable objects" professedly put in doubt (p. 85). My purpose is to ask what justification there is for calling immediate data "objects of sense." Statements of this type always call color visual, sound auditory, and so on. If it were merely a matter of making certain admissions for the sake of being able to play a certain game, there would be no objection. But if we are concerned with a matter of serious analysis, one is bound to ask, Whence come these adjectives? That color is visual in the sense of being an object of vision is certainly admitted in the common-sense world, but this is the world we have left. That color is visual is a proposition about color and it is a proposition which color itself does not utter. Visible or visual color is already a "synthetic" proposition, not a term nor an analysis of a single term. That color is seen, or is

visible, I do not call in question, but I insist that fact already assumes an answer to the question which Mr Russell has put. It presupposes existence beyond the color itself. To call the color a "sensory" object involves another assumption of the same kind but even more complex—involving, that is, even more existence beyond the color.

I see no reply to this statement except to urge that the terms "visual" and "sensory" as applied to the object are pieces of verbal supererogation having no force in the statement. This supposititious answer brings the matter to a focus. Is it possible to institute even a preliminary disparaging contrast between immediate objects and a world external to them unless the term "sensory" has a definite effect upon the meaning assigned to immediate data or objects? Before taking up this question I shall, however, call attention to another implication of the passage quoted. It appears to be implied that existence of color and "being seen" are equivalent terms. At all events, in similar arguments the identification is frequently made. But by description all that is required for the existence of color is certain physiological conditions. They may be present and color exist and yet not be seen. Things constantly act upon the optical apparatus in a way which fulfils the conditions of the existence of color without color being seen. This statement does not involve any dubious psychology about an act of attention. I only mean that the argument implies

over and above the existence of color something called seeing or perceiving—noting is perhaps a convenient neutral term. And this clearly involves an assumption of something beyond the existence of the datum—and this datum is by definition an external world. Without this assumption the term “immediate” could not be introduced. Is the *object* immediate or is it the object of an immediate noting? If the latter, then the hard datum already stands in connection with something beyond itself.

And this brings us to a further point. The sense objects are repeatedly spoken of as “known.” For example, “It is obvious that since the senses give knowledge of the latter kind [believed on their own account, without the support of any outside evidence] the immediate facts perceived by sight or touch or hearing do not need to be proved by argument but are completely self-evident” (p. 68). Again, they are spoken of as “facts of sense”¹ (p. 70), and as facts going along, for knowledge, with the laws of logic (p. 72). I do not know what belief or knowledge means here, nor do I understand what is meant by a *fact* being evidence for itself.² But obviously

¹ Contrast the statement: “When I speak of a fact, I do not mean one of the simple things of the world, I mean that a certain thing has a certain quality, or that certain things have a certain relation” (p. 51).

² In view of the assumption, shared by Mr. Russell, that there is such a thing as non-inferential knowledge, the conception that a thing offers evidence for itself needs analysis. Self-evidence is merely

Mr Russell knows, and knows their application to the sense object. And here is a further assumption of what, by definition, is a world external to the datum. Again, we have assumed in getting a question stated just what is professedly called into question. And the assumption is not made the less simple in that Mr Russell has defined belief as a case of a triadic relation, and said that without the recognition of the three-term relation the difference between perception and belief is inexplicable (p. 50).

We come to the question passed over. Can such terms as "visual," "sensory," be neglected without modifying the force of the question—that is, without affecting the implications which give it the force of a problem? Can we "know that objects of sense, or very similar objects, exist at times when we are not perceiving them?" Secondly, if this cannot be known, can we know that other objects, inferable from objects of sense but not necessarily resembling them, exist either when we are perceiving the objects of sense or at any other time" (p. 75)?

I think a little reflection will make it clear that without the limitation of the term "perceiving" by the term "sense" no *problem* as to existence *at other times*

a convenient term for disguising the difference between the indubitably given and the believed in. Hypotheses, for example, are self-evident sometimes, that is, obviously present for just what they are, but they are still hypotheses, and to offer their self-evident character as "evidence" would expose one to ridicule. Meanings may be self-evident (the Cartesian "clear and distinct") and truth dubious

can possibly arise. For neither (a) reference to time nor (b) limitation to a particular time is given either in the fact of existence of color or of perceiving color. Mr. Russell, for example, makes allusion to "a patch of color which is momentarily seen" (p. 76). This is the sort of thing that may pass without challenge in the common-sense world, but hardly in an analysis which professes to call that world in question. Mr. Russell makes the allusion in connection with discriminating between sensation as signifying "the mental event of our being aware" and the sensation as object of which we are aware—the sense object. He can hardly be guilty, then, in the immediate context, of proceeding to identify the momentariness of the event with the momentariness of the object. There must be some grounds for assuming the temporal quality of the object—and that "immediateness" belongs to it in any other way than as an object of immediate seeing. What are these grounds?

How is it, moreover, that even the act of being aware is describable as "momentary"? I know of no way of so identifying it except by discovering that it is delimited in a time continuum. And if this be the case, it is surely superfluous to bother about *inference* to "other times." They are assumed in stating the question—which thus turns out again to be no question. It may be only a trivial matter that Mr. Russell speaks of "that patch of color which is momentarily seen when we *look at the table*" (p. 76, italics).

mine) I would not attach undue importance to such phrases. But the frequency with which they present themselves in discussions of this type suggests the question whether as matter of fact "the patch of color" is not determined by reference to an object—the table—and not vice versa. As we shall see later, there is good ground for thinking that Mr. Russell is really engaged, not in bringing into question the existence of an object beyond the datum, but in re-defining the nature of an object, and that the reference to the patch of color as something more primitive than the table is really relevant to this reconstruction of traditional metaphysics. In other words, it is relevant to defining an object as a constant correlation of variations in qualities, instead of defining it as a substance in which attributes inhere—or a subject of predicates.

a) If anything is an eternal essence, it is surely such a thing as color taken by itself, as by definition it must be taken in the statement of the question by Mr. Russell. Anything more simple, timeless, and absolute than a red can hardly be thought of. One might question the eternal character of the received statement of, say, the law of gravitation on the ground that it is so complex that it may depend upon conditions not yet discovered and the discovery of which would involve an alteration in the statement. If $2 + 2 = 4$ be taken as an isolated statement, it might be conceived to depend upon hidden conditions and to be alterable with them. But by conception

we are dealing in the case of the colored surface with an ultimate, simple datum. It can have no implications beyond itself, no concealed dependencies. How then can its existence, even if its perception be but momentary, raise a question of "other times" at all?

b) Suppose a perceived blue surface to be replaced by a perceived red surface—and it will be conceded that the change, or replacement, is also perceived. There is still no ground for a belief in the temporally limited duration of either the red or the blue surface. Anything that leads to this conclusion would lead to the conclusion that the number two ceases when we turn to think of an atom. There is no way then of escaping the conclusion that the adjective "sense" in the term "sense object" is not taken innocently. It is taken as qualifying (for the purposes of statement of the problem) the nature of the object. Aside from reference to the momentariness of the *mental* event—a reference which is expressly ruled out—there is no way of introducing delimited temporal existence into the object save by reference to one and the same object which is perceived at different times to have different qualities. If the same object—however object be defined—is perceived to be of one color at one time and of another color at another time, then as a matter of course the color-datum of either the earlier or later time is identified as of transitory duration. But equally, of course, there is no question of *inference* to "other times." Other times have already been used

to describe, define, and delimit *this* (brief) time. A moderate amount of unbiased reflection will, I am confident, convince anyone that apart from a reference to the same existence perduring through different times while changing in *some* respect, no temporal delimitation of the existence of such a thing as sound or color can be made. Even Plato never doubted the eternal nature of red, he only argued from the fact that a *thing* is red at one time and blue at another to the unstable, and hence phenomenal, character of the *thing*. Or, put in a different way, we can know that a red is a momentary or transitory existence only if we know of other things which determine its beginning and cessation.

Mr. Russell gives a specific illustration of what he takes to be the correct way of stating the question in an account of what, in the common-sense universe of discourse, would be termed walking around a table. If we exclude considerations to which we have (apart from assuming just the things which are doubtful) no right, the datum turns out to be something to be stated as follows: "What is really known¹ is a correlation of muscular and other bodily sensations with changes in visual sensations" (p. 77). By "sensations" must be meant sensible objects, not mental events. This statement repeats the point already

¹ "Really known" is an ambiguous term. It may signify *understood*, or it may signify known to be *there* or *given*. Either meaning implies reference beyond

dealt with "muscular," "visual," and "other bodily" are all terms which are indispensable and which also assume the very thing professedly brought into question the external world as that was defined "Really known" assumes both noting and belief, with whatever complex implications they may involve—implications which, for all that appears to the contrary, may be indefinitely complex, and which, by Mr Russell's own statement, involve relationship to at least two other terms besides the datum. But in addition there appears the new term "correlation." I cannot avoid the conclusion that this term involves an *explicit* acknowledgment of the external world.

Note, in the first place, that the correlation in question is not simple—it is threefold, being a correlation of correlations. The "changes in visual sensations" (objects) must be correlated in a temporal continuum, the "muscular and other bodily sensations" (objects) must also constitute a connected series. One set of changes belongs to the serial class "visual", the other set to the serial class "muscular". And these two classes sustain a point-to-point correspondence to each other—they are correlated.

I am not raising the old question of how such complex correlations can be said to be either "given" or "known" in sense, though it is worth a passing notice that it was on account of this sort of phenomenon that Kant postulated his threefold intellectual synthesis of apprehension, reproduction, and

recognition in conception, and that it is upon the basis of necessity for such correlations that the rationalists have always criticized sensationalist empiricism. Personally I agree that temporal and spatial qualities are quite as much given in experience as are particulars—in fact, as I have been trying to show, particulars can be identified *as* particulars only in a relational complex. My point is rather (i) that any such given is already precisely what is meant by the “world”, and (ii) that such a highly specified correlation as Mr Russell here sets forth is in no case a psychological, or historical, primitive, but is a *logical* primitive arrived at by an analysis of an empirical complex.

(i) The statement involves the assumption of two temporal “spreads” which, moreover, are determinately specified as to their constituent elements and as to their order. And these sustain to each other a correlation, element to element. The elements, moreover, are all specifically qualitative and some of them, at least, are spatial. How this differs from the external world of common-sense I am totally unable to see. It may not be a very big external world, but having begged a small external world, I do not see why one should be too squeamish about extending it over the edges. The reply, I suppose, is that this complex defined and ordered object is by conception the object of a single perception, so that the question remains as to the possibility of inferring from it to

something beyond¹ But the reply only throws us back upon the point previously made A particular or single event of perceptual awareness can be *determined* as to its ingredients and structure only in a continuum of objects That is, the series of changes in color and shape can be determined as just such and such an ordered series of specific elements, with a determinate beginning and end, only in respect to a temporal continuum of things antecedent and succeeding Moreover, the determination involves an analysis which disentangles qualities and shapes from contemporaneously given objects which are irrelevant In a word, Mr Russell's object already extends beyond itself, it already belongs to a larger world

(11) A sensible object which can be described as a correlation of an ordered series of shapes and colors with an ordered series of muscular and other bodily objects presents a definition of an object, not a psychological datum What is stated is the definition of an object, of any object in the world Barring

¹ The reply implies that the exhaustive, all-at-once perception of the entire universe assumed by some idealistic writers does not involve any external world I do not make this remark for the sake of identifying myself with this school of thinkers, but to suggest that the limited character of empirical data is what occasions inference But it is a fallacy to suppose that the nature of the limitations is psychologically given On the contrary, they have to be determined by descriptive identifications which involve reference to the more extensive world Hence no matter how "self-evident" the existence of the data may be, it is never self-evident that they are rightly delimited with respect to the specific inference in process of making

ambiguities¹ in the terms "muscular" and "bodily," it seems to be an excellent definition. But good definition or poor, it states what a datum is *known* to be as an object in a known system, viz, definite correlations of specified and ordered elements. As a definition, it is general. It is not made from the standpoint of any particular percipient. It says *If* there be any percipient at a specified position in a space continuum, *then* the object may be perceived as such and such. And this implies that a percipient at any *other* position in the space continuum can deduce from the known system of correlations just what the series of shapes and colors will be from another position. For, as we have seen, the correlation of the series of changes of shape assumes a spatial continuum, hence one perspective projection may be correlated with that of any position in the continuum.

I have no direct concern with Mr Russell's solution of his problem. But if the prior analysis is correct, one may anticipate in advance that it will consist

¹ The ambiguities reside in the possibility of treating the "muscular and other bodily sensations" as meaning something other than data of motion and corporeality—however these be defined. Muscular sensation may be an awareness of motion of the muscles, but the phrase "of the muscles" does not alter the nature of motion as motion, it only specifies *what* motion is involved. And the long controversy about the existence of immediate "muscular sensations" testifies to what a complex cognitive determination we are here dealing with. Anatomical directions and long experimentation were required to answer the question. Were they psychologically primitive data no such questions could ever have arisen.

simply in making explicit the assumptions which have tacitly been made in stating the problem—subject to the conditions involved in failure to recognize that they have been made. And I think an analytic reading of the solution will bear out the following statement. His various “peculiar,” “private” points of view and their perspectives are nothing but names for the positions and projectional perspectives of the ordinary space of the public worlds. Their correlation by likeness is nothing but the explicit recognition that they are all defined and located, from the start, in one common spatial continuum. One quotation must suffice. “If two men are sitting in a room, two somewhat similar worlds are perceived by them, if a third man enters and sits between them, a third world, intermediate between the two others, begins to be perceived” (pp. 87–88). Pray what is this room and what defines the position (standpoint and perspective) of the two men and the standpoint “intermediate” between them? If the room and all the positions and perspectives which they determine are only within, say, Mr. Russell’s private world, that private world is interestingly complex, but it gives only the original problem over again, not a “solution” of it. It is a long way from likenesses *within* a private world to likenesses *between* private worlds. And if the worlds are all private, pray who judges their likeness or unlikeness? This sort of thing makes one conclude that Mr. Russell’s actual procedure is the reverse of

his professed one. He really starts with one room as a spatial continuum within which different positions and projections are determined, and which are readily correlated with one another just because they are projections from positions within one and the same space-room. Having employed this, he, then, can assign different positions to different percipients and institute a comparison between what each perceives and pass upon the extent of the likeness which exists between them.

What is the bearing of this account upon the "empirical datum"? Just this. The correlation of correlative series of changes which defines the object of sense perception is in no sense an original historic or psychologic datum. It signifies the result of an analysis of the usual crude empirical data, and an analysis which is made possible only by a very complex knowledge of the world. It marks not a primitive psychologic datum but an outcome, a limit, of analysis of a vast amount of empirical objects. The definition of an object as a correlation of various sub-correlations of changes represents a great advance—so it seems to me—over the definition of an object as a number of adjectives stuck into a substantive, but it represents an improved definition made possible by the advance of scientific knowledge about the common-sense world. It is a definition not only wholly independent of the context in which Mr Russell arrives at it, but is one which (once more and finally)

assumes extensive and accurate knowledge of just the world professedly called into question

II

I have come to the point of transition to the other part of my paper. A formal analysis is necessarily dialectical in character. As an empiricist I share in the dissatisfaction which even the most correct dialectical discussion is likely to arouse when brought to bear on matters of fact. I do not doubt that readers will feel that some *fact* of an important character in Mr Russell's statement has been left untouched by the previous analysis—even upon the supposition that the criticisms are just. Particularly will it be felt, I think, that psychology affords to his statement of the problem a support of fact not affected by any logical treatment. For this reason I append a summary statement as to the facts which are misconstrued by any statement which makes the existence of the world problematic.

I do not believe a psychologist would go as far as to admit that a definite correlation of elements as specific and ordered as that of Mr Russell's statement is a primitive psychological datum. Many would doubtless hold that patches of colored extensity, sounds, kinaesthetic qualities, etc., are psychologically much more primitive than, say, a table, to say nothing of a group of objects in space or a series of events in time, they would say, accordingly, that there is a

real problem as to how we infer or construct the latter on the basis of the former. At the same time I do not believe that they would deny that their own knowledge of the existence and nature of the ultimate and irreducible qualities of sense is the product of a long, careful, and elaborate analysis to which the sciences of physiology, anatomy, and controlled processes of experimental observation have contributed. The ordinary method of reconciling these two seemingly inconsistent positions is to assume that the original sensible data of experience, as they occurred in infancy, have been overlaid by all kinds of associations and inferential constructions so that it is now a work of intellectual art to recover them in their innocent purity.

Now I might urge that as matter of fact the reconstruction of the experience of infancy is itself an inference from present experience of an objective world, and hence cannot be employed to make a problem out of the knowledge of the existence of that world. But such a retort involves just the dialectic excursus which I am here anxious to avoid. I am on matter-of-fact ground when I point out that the assumption that even infancy begins with such highly discriminated particulars as those enumerated is not only highly dubious but has been challenged by eminent psychologists. According to Mr. James, for example, the original datum is large but confused, and specific sensible qualities represent the result of discrimina-

tions In this case, the elementary data, instead of being primitive empirical data, are the last terms, the limits, of the discriminations we have been able to make. That knowledge grows from a confusedly experienced external world to a world experienced as ordered and specified would then be the teaching of psychological science, but at no point would the mind be confronted with the problem of inferring a world Into the arguments in behalf of such a psychology of original experience I shall not go, beyond pointing out the extreme improbability (in view of what is known about instincts and about the nervous system) that the starting-point is a quality corresponding to the functioning of a single sense organ, much less of a single neuron unit of a sense organ If one adds, as a hypothesis, that even the most rudimentary conscious experience contains within itself the element of suggestion or expectation, it will be granted that the object of conscious experience even with an infant is homogeneous with the world of the adult One may be unwilling to concede the hypothesis But no one can deny that inference from one thing to another is itself an empirical event, and that just as soon as such inference occurs, even in the simplest form of anticipation and prevision, a world exists like in kind to that of the adult

I cannot think that it is a trivial coincidence that psychological analysis of sense perception came into existence along with that method of experimentally

controlled observation which marks the beginning of modern science. Modern science did not begin with discovery of any new kind of inference. It began with the recognition of the need of different data if inference is to proceed safely. It was contended that starting with the ordinary—or customary—objects of perception hopelessly compromised in advance the work of inference and classification. Hence the demand for an experimental resolution of the common-sense objects in order to get data less ambiguous, more minute, and more extensive. Increasing knowledge of the structure of the nervous system fell in with increased knowledge of other objects to make possible a discrimination of specific qualities in all their diversity, it brought to light that habits, individual and social (through influence on the formation of individual habits), were large factors in determining the accepted or current system of objects. It was brought to light, in other words, that factors of chance, habit, and other non-rational factors were greater influences than intellectual inquiry in determining what men currently believed about the world. What psychological analysis contributed was, then, *not* primitive historic data out of which a world had somehow to be extracted, but an analysis of the world which had been previously thought of and believed in, into data making possible better inferences and beliefs about the world. Analysis of the influences customarily determining belief and inference

was a powerful force in the movement to improve knowledge of the world

This statement of matters of fact bears out, it will be observed, the conclusions of the dialectical analysis. That brought out the fact that the ultimate and elementary data of sense perception are identified and described as limiting elements in a complex world. What is now added is that such an identification of elements marks a significant addition to the resources of the technique of inquiry devoted to improving knowledge of the world. When these data are isolated from their logical status and office, they are inevitably treated as self-sufficient, and they leave upon our hands the insoluble, because self-contradictory, problem of deriving from them the world of common-sense and science. Taken for what they really are, they are elements detected *in* the world and serving to guide and check our inferences about it. They are never self-inclosed particulars, they are always—even as crudely given—connected with other things in experience. But analysis gets them in the form where they are keys to much more significant relations. In short, the particulars of perception, taken as complete and independent, make nonsense. Taken as objects discriminated for the purposes of improving, reorganizing, and testing knowledge of the world they are invaluable assets. The material fallacy lying behind the formal fallacy which the first part of this paper noted is the failure to recognize

that what is doubtful is not the existence of the world but the validity of certain customary yet inferential beliefs about things in it. It is not the common-sense *world* which is doubtful, or which is inferential, but *common-sense* as a complex of beliefs about specific things and relations *in* the world. Hence never in any actual procedure of inquiry do we throw the existence of the world into doubt, nor can we do so without self-contradiction. We doubt some received piece of "knowledge" about some specific thing of that world, and then set to work, as best we can, to rectify it. The contribution of psychological science to determining unambiguous data and eliminating the irrelevant influences of passion and habit which control the inferences of common-sense is an important aid in the technique of such rectifications.

XII

WHAT PRAGMATISM MEANS BY PRACTICAL

Pragmatism, according to Mr James, is a temper of mind, an attitude, it is also a theory of the nature of ideas and truth, and, finally, it is a theory about reality. It is pragmatism as method which is emphasized, I take it, in the subtitle, "a new name for some old ways of thinking." It is this aspect which I suppose to be uppermost in Mr James's own mind, one frequently gets the impression that he conceives the discussion of the other two points to be illustrative material, more or less hypothetical, of the method. The briefest and at the same time the most comprehensive formula for the method is "The attitude of looking away from first things, principles, 'categories,' supposed necessities, and of looking towards last things, fruits, consequences, facts" (pp 54-55). And as the attitude looked "away from" is the rationalistic, perhaps the chief aim of the lectures is to exemplify some typical differences resulting from taking one outlook or the other.

But pragmatism is "used in a still wider sense, as meaning also a certain theory of truth" (p 55),

¹ William James, *Pragmatism A New Name for Some Old Ways of Thinking* (Popular Lectures on Philosophy) New York Longmans, Green, & Co, 1907 Pp xiii+309

it is "a genetic theory of what is meant by truth" (p 65) Truth means, as a matter of course, agreement, correspondence, of idea and fact (p. 198), but what do agreement, correspondence, mean? With rationalism they mean "a static, inert relation," which is so ultimate that of it nothing more can be said With pragmatism they signify the guiding or leading power of ideas by which we "dip into the particulars of experience again," and if by its aid we set up the arrangements and connections among experienced objects which the idea intends, the idea is verified, it corresponds with the things it means to square with (pp 205-6) The idea is true which works in leading us to what it purports (p 80)¹ Or, "any idea that will carry us prosperously from any one part of experience to any other part, linking things satisfactorily, working securely, simplifying, saving labor, is true for just so much, true in so far forth" (p 58). This notion presupposes that ideas are essentially intentions (plans and methods), and that what they, as ideas, ultimately intend is *prospective*—certain changes in prior existing things This contrasts again with rationalism, with its copy theory, where ideas, *as* ideas, are ineffective and impotent, since they mean only to mirror a reality (p 69) complete without them Thus we are led to the third aspect of pragmatism The alternative between rationalism and pragmatism "concerns the structure

¹ Certain aspects of the doctrine are here purposely omitted, and will meet us later

of the universe itself" (p 258) "The essential contrast is that reality for pragmatism is still in the making" (p 257) And in a recent number of the *Journal of Philosophy, Psychology, and Scientific Methods*,¹ he says "I was primarily concerned in my lectures with contrasting the belief that the world is still in the process of making with the belief that there is an eternal edition of it ready-made and complete "

I

It will be following Mr James's example, I think, if we here regard pragmatism as primarily a method, and treat the account of ideas and their truth and of reality somewhat incidentally so far as the discussion of them serves to exemplify or enforce the method Regarding the attitude of orientation which looks to outcomes and consequences, one readily sees that it has, as Mr James points out, points of contact with historic empiricism, nominalism, and utilitarianism. It insists that general notions shall "cash in" as particular objects and qualities in experience, that "principles" are ultimately subsumed under facts, rather than the reverse, that the empirical consequence rather than the a priori basis is the sanctioning and warranting factor But all of these ideas are colored and transformed by the dominant influence of experimental science the method of treating conceptions, theories, etc , as working hypotheses, as

¹ Vol IV, p 547

directors for certain experiments and experimental observations Pragmatism as attitude represents what Mr Peirce has happily termed the "laboratory habit of mind" extended into every area where inquiry may fruitfully be carried on A scientist would, I think, wonder not so much at the method as at the lateness of philosophy's conversion to what has made science what it is Nevertheless it is impossible to forecast the intellectual change that would proceed from carrying the method sincerely and unreservedly into all fields of inquiry Leaving philosophy out of account, what a change would be wrought in the historical and social sciences—in the conceptions of politics and law and political economy! Mr James does not claim too much when he says "The center of gravity of philosophy must alter its place The earth of things, long thrown into shadow by the glories of the upper ether, must resume its rights It will be an alteration in the 'seat of authority' that reminds one almost of the Protestant Reformation" (p 123)

I can imagine that many would not accept this method in philosophy for very diverse reasons, perhaps among the most potent of which is lack of faith in the power of the elements and processes of experience and life to guarantee their own security and prosperity, because, that is, of the feeling that the world of experience is so unstable, mistaken, and fragmentary that it must have an absolutely permanent, true,

and complete ground I cannot imagine, however, that so much uncertainty and controversy as actually exists should arise about the content and import of the doctrine on the basis of the general formula. It is when the method is applied to special points that questions arise. Mr James reminds us in his preface that the pragmatic movement has found expression "from so many points of view, that much unconcerted statement has resulted." And speaking of his lectures he goes on to say "I have sought to unify the picture as it presents itself to my own eyes, dealing in broad strokes." The "different points of view" here spoken of have concerned themselves with viewing pragmatically a number of different things. And it is, I think, Mr James's effort to combine them, as they stand, which occasions misunderstanding among Mr James's readers. Mr James himself applied it, for example, in 1898 to philosophic controversies to indicate what they mean in terms of practical issues at stake. Before that, Mr Peirce himself (in 1878) had applied the method to the proper way of *conceiving* and defining objects. Then it has been applied to *ideas* in order to find out what they mean in terms of what they intend, and what and how they must intend in order to be true. Again, it has been applied to *beliefs*, to what men actually accept, hold to, and affirm. Indeed, it lies in the nature of pragmatism that it should be applied as widely as possible, and to things as diverse as controversies, beliefs, truths,

ideas, and objects But yet the situations and problems *are* diverse, so much so that, while the meaning of each may be told on the basis of "last things," "fruits," "consequences," "facts," *it is quite certain that the specific last things and facts will be very different in the diverse cases, and that very different types of meaning will stand out* "Meaning" will itself *mean* something quite different in the case of "objects" from what it will mean in the case of "ideas," and for "ideas" something different from "truths " Now the explanation to which I have been led of the unsatisfactory condition of contemporary pragmatic discussion is that in composing these "different points of view" into a single pictorial whole, the distinct type of consequence and hence of meaning of "practical" appropriate to each has not been sufficiently emphasized

1 When we consider separately the subjects to which the pragmatic method has been applied, we find that Mr James has provided the necessary formula for each—with his never-failing instinct for the concrete We take first the question of the significance of an object the meaning which should properly be contained in its conception or definition "To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve—what sensations we are to expect from it and what reactions we must prepare" (pp 46-47) Or, more

shortly, as it is quoted from Ostwald, "All realities influence our practice, and that influence is their meaning for us" (p 48) Here it will be noted that the start is from objects already empirically given or presented, existentially vouched for, and the question is as to their proper conception—What is the proper meaning, or idea, of an object? And the meaning is *the effects these given objects produce* One might doubt the correctness of this theory, but I do not see how one could doubt its import, or could accuse it of subjectivism or idealism, since the object with its power to produce effects is assumed Meaning is expressly distinguished from objects, not confused with them (as in idealism), and is said to consist in the practical reactions objects exact of us or impose upon us When, then, it is a question of an object, "meaning" signifies its *conceptual content or connotation*, and "*practical*" means *the future responses which an object requires of us or commits us to*

2 But we may also start from a given idea, and ask what the *idea* means Pragmatism will, of course, look to future consequences, but they will clearly be of a different sort when we start from an idea as idea, than when we start from an object For what an idea as idea means, is precisely that an object is *not* given The pragmatic procedure here is to set the idea "at work within the stream of experience It appears less as a solution than as a program for more work, and particularly as an indication of the ways in which

existing realities may be changed. Theories, thus, become instruments. We don't lie back on them, we move forward, and, on occasion, make nature over again by their aid" (p. 53). In other words, an idea is a draft drawn upon existing things, and intention to act so as to arrange them in a certain way. From which it follows that if the draft is honored, if existences, following upon the actions, rearrange or readjust themselves in the way the idea intends, the idea is true. When, then, it is a question of an idea, it is the idea itself which is practical (being an intent) and its *meaning* resides in the existences which, as changed, it intends. While the meaning of an object is the changes it requires in our attitude,¹ the meaning of an idea is the changes it, as our attitude, effects in objects.

3 Then we have another formula, applicable not to objects nor ideas as objects and ideas, but to *truths*—to things, that is, where the meaning of the object and of the idea is assumed to be already ascertained. It reads: "What difference would it practically make to anyone if this notion rather than that notion were true? If no practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle" (p. 45). There can be "no difference in abstract truth that

¹ Only those who have already lost in the idealistic confusion of existence and meaning will take this to mean that the object is those changes in our reactions.

doesn't express itself in a difference in concrete fact, and in conduct consequent upon the fact, imposed on somebody" (p. 50).¹ Now when we start with something which is already a truth (or taken to be truth), and ask for its meaning in terms of its consequences, it is implied that the conception, or conceptual significance, is already clear, and that the existences it refers to are already in hand. Meaning here, then, can be neither the connotative nor denotative reference of a term, they are covered by the two prior formulae. Meaning here means *value*, importance. The practical factor is, then, the worth character of these consequences: they are good or bad, desirable or undesirable, or merely *nil*, indifferent, in which latter case belief is idle, the controversy a vain and conventional, or verbal, one.

The term "meaning" and the term "practical" taken in isolation, and without explicit definition from their specific context and problem, are triply ambiguous. The meaning may be the conception or definition of an *object*, it may be the denotative existential reference of an *idea*, it may be actual value or *importance*. So practical in the corresponding cases may mean the attitudes and conduct exacted of us by objects, or the capacity and tendency of an idea to

¹ I assume that the reader is sufficiently familiar with Mr. James's book not to be misled by the text into thinking that Mr. James himself discriminates as I have done these three types of problems from one another. He does not, but, none the less, the three formulae for the three situations are there.

effect changes in prior existences, or the desirable and undesirable quality of certain ends. The general pragmatic attitude, none the less, is applied in all cases.

If the differing problems and the correlative diverse significations of the terms "meaning" and "practical" are borne in mind, not all will be converted to pragmatism, but the present uncertainty as to what pragmatism is, anyway, and the present constant complaints on both sides of misunderstanding will, I think, be minimized. At all events, I have reached the conclusion that what the pragmatic movement just now wants is a clear and consistent bearing in mind of these different problems and of what is meant by practical in each. Accordingly the rest of this paper is an endeavor to elucidate from the standpoint of pragmatic method the importance of enforcing these distinctions.

II

First, as to the problems of philosophy when pragmatically approached, Mr. James says: "The whole function of philosophy ought to be to find out what definite difference it will make to you and me, at definite instants of our life, if this world-formula or that world-formula be true" (p. 50). Here the world-formula is assumed as already given, it is there, defined and constituted, and the question is as to its import if believed. But from the second standpoint, that of idea as working hypothesis, the chief function of philosophy is not to find out what difference

ready-made formulae make, *if true*, but to arrive at and to clarify their *meaning as programs of behavior for modifying the existent world*. From this standpoint, the meaning of a world-formula is practical and moral, not merely in the consequences which flow from accepting a certain conceptual content as true, but as regards that content itself. And thus at the very outset we are compelled to face this question. Does Mr James employ the pragmatic method to discover the value in terms of consequences in life of some formula which has its logical content already fixed; or does he employ it to criticize and revise and, ultimately, to constitute the meaning of that formula? If it is the first, there is danger that the pragmatic method will be employed only to vivify, if not validate, doctrines which in themselves are pieces of rationalistic metaphysics, not inherently pragmatic. If the last, there is danger that some readers will think old notions are being confirmed, when in truth they are being translated into new and inconsistent notions.

Consider the case of design. Mr James begins with accepting a ready-made notion, to which he then applies the pragmatic criterion. The traditional notion is that of a "seeing force that runs things." This is rationalistically and retrospectively empty, its being there makes no difference. (This seems to overlook the fact that the past world may be just what it is in virtue of the difference which a blind force or a seeing force has already made in it. A pragmatist

as well as a rationalist may reply that it makes no difference retrospectively only because we leave out the most important retrospective difference) But "returning with it into experience, we gain a more confiding outlook on the future. If not a blind force, but a seeing force, runs things, we may reasonably expect better issues. *This vague confidence in the future is the sole pragmatic meaning at present discernible in the terms design and designer*" (p. 115, italics mine). Now is this meaning intended to *replace* the meaning of a "seeing force which runs things"? Or is it intended to superadd a pragmatic value and validation to that concept of a seeing force? Or does it mean that, irrespective of the existence of any such object, a belief in it has that value? Strict pragmatism would seem to require the first interpretation.

The same difficulties arise in the discussion of spiritualistic theism *versus* materialism. Compare the two following statements. "The notion of God guarantees an ideal order that shall be permanently preserved" (p. 106). "Here, then, in these different emotional and practical appeals, in these adjustments of our attitudes of hope and expectation, and all the delicate consequences which their differences entail, *lie the real meanings of materialism and spiritualism*" (p. 107, italics mine). Does the latter method of determining the meaning of, say, a spiritual God afford the substitute for the conception of him as a "superhuman power" effecting the eternal preserva-

tion of something, does it, that is, define God, supply the content for our notion of God? Or does it merely superadd a value to a meaning already fixed? And, if the latter, does the object, God as defined, or the notion, or the belief (the acceptance of the notion) effect these consequent values? In either of the latter alternatives, the good or valuable consequences cannot clarify the meaning or conception of God, for, by the argument, they proceed from a prior definition of God. They cannot prove, or render more probable, the existence of such a being, for, by the argument, these desirable consequences depend upon accepting such an existence, and not even pragmatism can prove an existence from desirable consequences which themselves exist only when and if that other existence is there. On the other hand, if the pragmatic method is not applied simply to tell the value of a belief or controversy, but to fix the meaning of the terms involved in the belief, resulting consequences would serve to constitute the entire meaning, intellectual as well as practical, of the terms, and hence the pragmatic method would simply abolish the meaning of an antecedent power which will perpetuate eternally some existence. For that consequence flows not from the belief or idea, but from the existence, the power. It is not pragmatic at all.

Accordingly, when Mr. James says "Other than this *practical* significance, the words God, free will, design, *have none*. Yet dark though they be in

themselves, or intellectualistically taken, when we bear them on to life's thicket with us, the darkness then grows light about us" (p 121, *italics mine*), what is meant? Is it meant that when we take the intellectualistic notion and employ it, it gets value in the way of results, and hence then has some value of its own, or is it meant that the intellectual content itself must be determined in terms of the changes effected in the ordering of life's thicket? An explicit declaration on this point would settle, I think, not merely a point interesting in itself, but one essential to the determination of what is pragmatic method. For myself, I have no hesitation in saying that it seems unpragmatic for pragmatism to content itself with finding out the value of a conception whose own inherent significance pragmatism has not first determined, a fact which entails that it be taken not as a truth but simply as a working hypothesis. In the particular case in question, moreover, it is difficult to see how the pragmatic method could possibly be applied to a notion of "eternal perpetuation," which, by its nature, can never be empirically verified, or cashed in any particular case.

This brings us to the question of truth. The problem here is also ambiguous in advance of definition. Does the problem of what is truth refer to discovering the "true meaning" of something, or to discovering what an idea has to effect, and how, in order to be true, or to discovering what the value of

truth is when it is an existent and accomplished fact ?

(1) We may, of course, find the "true meaning" of a thing, as distinct from its incorrect interpretation, without thereby establishing the truth of the "true meaning"—as we may dispute about the "true meaning" of a passage in the classics concerning Centaurs, without the determination of its true sense establishing the truth of the notion that there are Centaurs. Occasionally this "true meaning" seems to be what Mr. James has in mind, as when, after the passage upon design already quoted, he goes on "But if cosmic confidence is right, not wrong, better, not worse, that [vague confidence in the future] is a most important meaning. That much at least of possible 'truth' the terms will then have in them" (p. 115). "Truth" here seems to mean that design has a genuine, not merely conventional or verbal, meaning—that something is at stake. And there are frequently points where "truth" seems to mean just meaning that is genuine as distinct from empty or verbal.

(2) But the problem of the meaning of truth may also refer to the meaning or value of truths that already exist as truths. We have them, they exist, now what do they mean? The answer is "True ideas lead us into useful verbal and conceptual quarters as well as directly up to useful sensible termini. They lead to consistency, stability, and flowing human intercourse" (p. 215). This, referring to things already true, I do not suppose the most case-hardened rationalist

would question; and even if he questions the pragmatic contention that these consequences define the meaning of truth, he should see that here is not given an account of what it means for an idea to *become true*, but only of what it means *after* it has become true, truth as *fact accompli*. It is the meaning of truth as *fact accompli* which is here defined.

Bearing this in mind, I do not know why a mild-tempered rationalist should object to the doctrine that truth is valuable not *per se*, but because, when given, it leads to desirable consequences. "The true thought is useful here because the home which is its object is useful. The practical value of true ideas is thus primarily derived from the practical importance of their objects to us" (p. 203). And many besides confirmed pragmatists, any utilitarian, for example, would be willing to say that our duty to pursue "truth" is conditioned upon its leading to objects which upon the whole are valuable. "The concrete benefits we gain are what we mean by calling the pursuit a duty" (p. 231, compare p. 76). (3) Difficulties have arisen chiefly because Mr. James is charged with converting simply the foregoing proposition, and arguing that since true ideas are good, any idea if good in any way is true. Certainly transition from one of these conceptions to the other is facilitated by the fact that ideas are tested as to their validity by a certain goodness, viz., whether they are good for accomplishing what they intend, for what they claim to be good.

for, that is, certain modifications in prior given existences. In this case, it is the idea which is practical, since it is essentially an intent and plan of altering prior existences in a specific situation, which is indicated to be unsatisfactory by the very fact that it needs or suggests a specific modification. Then arises the theory that ideas as ideas are always working hypotheses concerning the attaining of particular empirical results, and are tentative programs (or sketches of method) for attaining them. If we stick consistently to this notion of ideas, only *consequences which are actually produced by the working of the idea in co-operation with, or application to, prior existences are good consequences in the specific sense of good which is relevant to establishing the truth of an idea*. This is, at times, unequivocally recognized by Mr. James (See, for example, the reference to *verification*, on p. 201, the acceptance of the idea that verification means the advent of the object intended, on p. 205.)

But at other times any good which flows from acceptance of a belief is treated as if it were an evidence, *in so far*, of the truth of the idea. This holds particularly when theological notions are under consideration. Light would be thrown upon how Mr. James conceives this matter by statements on such points as these. If ideas terminate in good consequences, but yet the goodness of the consequences was no part of the intention of an idea, does the goodness have any verifying force? If the goodness of

consequences arises from the context of the idea in belief rather than from the idea itself, does it have any verifying force?¹ If an idea leads to consequences which are good in the *one* respect only of fulfilling the intent of the idea (as when one drinks a liquid to test the idea that it is a poison), does the badness of the consequences in every other respect detract from the verifying force of consequences?

Since Mr James has referred to me as saying "truth is what gives satisfaction" (p 234), I may remark (apart from the fact that I do not think I ever said that truth is what *gives* satisfaction) that I have never identified any satisfaction with the truth of an idea, save *that* satisfaction which arises when the idea as working hypothesis or tentative method is applied to prior existences in such a way as to fulfil what it intends

My final impression (which I cannot adequately prove) is that upon the whole Mr James is most concerned to enforce, as against rationalism, two conclusions about the character of truths as *facts accomplis* namely, that they are made, not a priori, or eternally in existence,² and that their value or

¹ The idea of immortality, or the traditional theistic idea of God, for example, may produce its good consequences, not in virtue of the idea as idea, but from the character of the person who entertains the belief, or it may be the idea of the supreme value of ideal considerations, rather than that of their temporal duration, which works

² "Eternal truth" is one of the most ambiguous phrases that philosophers trip over. It may mean eternally in existence, or that

importance is not static, but dynamic and practical. The special question of *how* truths are made is not particularly relevant to this anti-rationalistic crusade, while it is the chief question of interest to many. Because of this conflict of problems, what Mr James says about the value of truth when accomplished is likely to be interpreted by some as a criterion of the truth of ideas, while, on the other hand, Mr James himself is likely to pass lightly from the consequences that determine the worth of a belief to those which decide the worth of an idea. When Mr James says the function of giving "satisfaction in marrying previous parts of experience with newer parts" is necessary in order to establish truth, the doctrine is unambiguous. The satisfactory character of consequences is itself measured and defined by the conditions which led up to it, the inherently satisfactory quality of results is not taken as validating the antecedent intellectual operations. But when he says (not of his own position, but of an opponent's¹) of the idea of an absolute, "so far as it affords such comfort it surely

a statement which is ever true is always true (if it is true a fly is buzzing, it is eternally true that just now a fly buzzed), or it may mean that some truths, *in so far as wholly conceptual*, are irrelevant to any particular time determination, since they are non-existential in import—e g, the truth of geometry dialectically taken—that is, without asking whether any particular existence exemplifies them

¹ Such statements, it ought in fairness to be said, generally come when Mr James is speaking of a doctrine which he does not himself believe, and arise, I think, in that fairness and frankness of Mr James,

is not sterile, it has that amount of value, it performs a concrete function. As a good pragmatist I myself ought to call the absolute true *in so far forth* then; and I unhesitatingly now do so" (p 73), the doctrine seems to be as unambiguous in the other direction: that any good, consequent upon acceptance of a belief is, in so far forth,¹ a warrant of truth. In such passages as the following (which are of the common type) the two notions seem blended together. "Ideas become true just in so far as they help us to get

so unusual in philosophers, which cause him to lean over backward—unpragmatically, it seems to me. As to the claim of his own doctrine, he consistently sticks to his statement. "Pent in, as the pragmatist, more than any one, sees himself to be, between the whole body of funded truths squeezed from the past and the coercions of the world of sense about him, who, so well as he, feels the immense pressure of objective control under which our minds perform their operations? If anyone imagines that this law is lax, let him keep its commandments one day, says Emerson" (p 233)

¹ Of course, Mr James holds that this "in so far" goes a very small way. See pp 77-79. But even the slightest concession is, I think, non-pragmatic unless the satisfaction is relevant to the idea as intent. Now the satisfaction in question comes not from the idea as *idea*, but from its acceptance as *true*. Can a satisfaction dependent on an assumption that an idea is already true be relevant to testing the truth of an idea? And can an idea, like that of the absolute, which, if true, "absolutely" precludes any appeal to consequences as test of truth, be confirmed by use of the pragmatic test without sheer self-contradiction? In other words, we have a confusion of the test of an idea as idea, with that of the value of a belief as belief. On the other hand, it is quite possible that all Mr James intends by truth here is true (i.e., genuine) meaning at stake in the issue—true not as distinct from false, but from meaningless or verbal.

into satisfactory relations with other parts of our experience" (p 58), and, again, on the same page: "Any idea that will carry us *prosperously* from any one part of our experience to any other part, linking things *satisfactorily*, working securely, simplifying, saving labor, is true for just so much" (italics mine) An explicit statement as to whether the carrying function, the linking of things, is satisfactory and prosperous and hence true in so far as it executes the intent of an idea, or whether the satisfaction and prosperity reside in the material consequences on their own account and in that aspect make the idea true, would, I am sure, locate the point at issue and economize and fructify future discussion At present pragmatism is accepted by those whose own notions are thoroughly rationalistic in make-up as a means of refurbishing, galvanizing, and justifying those very notions It is rejected by non-rationalists (empiricists and naturalistic idealists) because it seems to them identified with the notion that pragmatism holds that the desirability of certain beliefs overrides the question of the meaning of the ideas involved in them and the existence of objects denoted by them Others (like myself), who believe thoroughly in pragmatism as a method of orientation, as defined by Mr James, and who would apply the method to the determination of the meaning of objects, the intent and worth of ideas as ideas, and to the human and moral value of beliefs, when these various problems

are carefully distinguished from one another, do not know whether they are pragmatists in some other sense, because they are not sure whether the practical, in the sense of desirable facts which define the worth of a belief, is confused with the practical as an attitude imposed by objects, and with the practical as a power and function of ideas to effect changes in prior existences. Hence the importance of knowing which one of the three senses of practical is conveyed in any given passage.

It would do Mr. James an injustice, however, to stop here. His real doctrine is that a belief is true when it satisfies both personal needs and the requirements of objective things. Speaking of pragmatism, he says, "Her only test of probable truth is what works best in the way of *leading us*, what fits every part of life best and *combines with the collectivity of experience's demands*, nothing being omitted" (p. 80, italics mine). And again, "That new idea is truest which performs most felicitously its function of satisfying *our double urgency*" (p. 64). It does not appear certain from the context that this "double urgency" is that of the personal and the objective demands, respectively, but it is probable (see, also, p. 217, where "consistency with previous truth and novel fact" is said to be "always the most imperious claimant"). On this basis, the "in so far forth" of the truth of the absolute because of the comfort it supplies, means that one of the two conditions which need to be satisfied has

been met, so that if the idea of the absolute met the other one also, it would be quite true. I have no doubt this is Mr. James's meaning, and it sufficiently safeguards him from the charge that pragmatism means that anything which is agreeable is true. At the same time, I do not think, in logical strictness, that satisfying one of two tests, when satisfaction of both is required, can be said to constitute a belief true even "in so far forth."

III

At all events this raises a question not touched so far—the place of the personal in the determination of truth. Mr. James, for example, emphasizes the doctrine suggested in the following words: "We say this theory solves it [the problem] more satisfactorily than that theory, but that means more satisfactorily *to ourselves*, and individuals will emphasize their points of satisfaction differently" (p. 61, italics mine). This opens out into a question which, in its larger aspects—the place of the personal factor in the constitution of knowledge systems and of reality—I cannot here enter upon, save to say that a synthetic pragmatism such as Mr. James has ventured upon will take a very different form according as the point of view of what he calls the "Chicago School" or that of humanism is taken as a basis for interpreting the nature of the personal. According to the latter view, the personal appears to be ultimate and unanalyzable,

the metaphysically real. Associations with idealism, moreover, give it an idealistic turn, a translation, in effect, of monistic intellectualistic idealism into pluralistic, voluntaristic idealism. But, according to the former, the personal is not ultimate, but is to be analyzed and defined, biologically on its genetic side, ethically on its prospective and functioning side.

There is, however, one phase of the teaching illustrated by the quotation which is directly relevant here. Because Mr. James recognizes that the personal element enters into judgments passed upon whether a problem has or has not been satisfactorily solved, he is charged with extreme subjectivism, with encouraging the element of personal preference to run roughshod over all objective controls. Now the question raised in the quotation is primarily one of fact, not of doctrine. Is or is not a personal factor found in truth evaluations? If it is, pragmatism is not responsible for introducing it. If it is not, it ought to be possible to refute pragmatism by appeal to empirical fact, rather than by reviling it for subjectivism. Now it is an old story that philosophers, in common with theologians and social theorists, are as sure that personal habits and interests shape their opponents' doctrines as they are that their own beliefs are "absolutely" universal and objective in quality. Hence arises that dishonesty, that insincerity characteristic of philosophic discussion. As Mr. James says (p. 8), "The most potential of all our premises is never men-

tioned " Now the moment the complicity of the personal factor in our philosophic valuations is recognized, is recognized fully, frankly, and generally, that moment a new era in philosophy will begin We shall have to discover the personal factors that now influence us unconsciously, and begin to accept a new and moral responsibility for them, a responsibility for judging and testing them by their consequences So long as we ignore this factor, its deeds will be largely evil, not because *it* is evil, but because, flourishing in the dark, it is without responsibility and without check The only way to control it is by recognizing it And while I would not prophesy of pragmatism's future, I would say that this element which is now so generally condemned as intellectual dishonesty (perhaps because of an uneasy, instinctive recognition of the searching of hearts its acceptance would involve) will in the future be accounted unto philosophy for righteousness' sake

So much in general In particular cases, it is possible that Mr James's language occasionally leaves the impression that the fact of the inevitable involution of the personal factor in every belief gives some special sanction to some special belief. Mr James says that his essay on the *right* to believe was unluckily entitled the "*Will* to believe" (p 258) Well, even the term "*right*" is unfortunate, if the personal or belief factor is inevitable—unfortunate because it seems to indicate a privilege which might

be exercised in special cases, in religion, for example, though not in science, or, because it suggests to some minds that the fact of the personal complicity involved in belief is a warrant for this or that special personal attitude, instead of being a warning to locate and define it so as to accept responsibility for it. If we mean by "will" not something deliberate and consciously intentional (much less, something insincere), but an active personal participation, then belief *as* will, rather than either the right or the will to believe seems to phrase the matter correctly.

I have attempted to review not so much Mr James's book as the present status of the pragmatic movement which is expressed in the book, and I have selected only those points which seem to bear directly upon matters of contemporary controversy. Even as an account of this limited field, the foregoing pages do an injustice to Mr James, save as it is recognized that his lectures were "popular lectures," as the title-page advises us. We cannot expect in such lectures the kind of explicitness which would satisfy the professional and technical interests that have inspired this review. Moreover, it is inevitable that the attempt to compose different points of view, hitherto unco-ordinated, into a single whole should give rise to problems foreign to any one factor of the synthesis, left to itself. The need and possibility of the discrimination of various elements in the pragmatic meaning of "practical," attempted in this

review, would hardly have been recognized by me were it not for by-products of perplexity and confusion which Mr James's combination has effected. Mr James has given so many evidences of the sincerity of his intellectual aims, that I trust to his pardon for the injustice which the character of my review may have done *him*, in view of whatever service it may render in clarifying the problem to which he is devoted.

As for the book itself, it is in any case beyond a critic's praise or blame. It is more likely to take place as a philosophical classic than any other writing of our day. A critic who should attempt to appraise it would probably give one more illustration of the sterility of criticism compared with the productiveness of creative genius. Even those who dislike pragmatism can hardly fail to find much of profit in the exhibition of Mr James's instinct for concrete facts, the breadth of his sympathies, and his illuminating insights. Unreserved frankness, lucid imagination, varied contacts with life digested into summary and trenchant conclusions, keen perceptions of human nature in the concrete, a constant sense of the subordination of philosophy to life, capacity to put things into an English which projects ideas as if bodily into space till they are solid things to walk around and survey from different sides—these things are not so common in philosophy that they may not smell sweet even by the name of pragmatism.

XIII

AN ADDED NOTE AS TO THE "PRACTICAL"

It is easier to start a legend than to prevent its continued circulation. No misconception of the instrumental logic has been more persistent than the belief that it makes knowledge merely a means to a practical end, or to the satisfaction of practical needs—practical being taking to signify some quite definite utilities of a material or bread-and-butter type. Habitual associations aroused by the word "pragmatic" have been stronger than the most explicit and emphatic statements which any pragmatist has been able to make. But I again affirm that the term "pragmatic" means only the rule of referring all thinking, all reflective considerations, to *consequences* for final meaning and test. Nothing is said about the nature of the consequences, they may be aesthetic, or moral, or political, or religious in quality—anything you please. All that the theory requires is that they be in some way consequences of thinking, not, indeed, of it alone, but of it acted upon in connection with other things. This is no after-thought inserted to lessen the force of objections. Mr. Peirce explained that he took the term "pragmatic" from Kant, in order to denote empirical consequences. When he refers to their practical character it is only to indicate

a criterion by which to avoid purely verbal disputes. Different consequences are alleged to constitute rival meanings of a term. Is a difference more than merely one of formulation? The way to get an answer is to ask whether, if realized, these consequences would exact of us different modes of behavior. If they do not make such a difference in conduct the difference between them is conventional. It is not that consequences are themselves practical, but that practical consequences from them may at times be appealed to in order to decide the specific question of whether two proposed meanings differ save in words. Mr. James says expressly that what is important is that the consequences should be specific, not that they should be active. When he said that general notions must "cash in," he meant of course that they must be translatable into verifiable specific things. But the words "cash in" were enough for some of his critics, who pride themselves upon a logical rigor unattainable by mere pragmatists.

In the logical version of pragmatism termed instrumentalism, action or practice does indeed play a fundamental rôle. But it concerns not the nature of consequences but the nature of knowing. To use a term which is now more fashionable (and surely to some extent in consequence of pragmatism) than it was earlier, instrumentalism means a behaviorist theory of thinking and knowing. It means that knowing is literally something which we do, that

analysis is ultimately physical and active, that meanings in their logical quality are standpoints, attitudes, and methods of behaving toward facts, and that active experimentation is essential to verification. Put in another way it holds that thinking does not mean any transcendent states or acts suddenly introduced into a previously natural scene, but that the operations of knowing are (or are artfully derived from) natural responses of the organism, which constitute knowing in virtue of the situation of doubt in which they arise and in virtue of the uses of inquiry, reconstruction, and control to which they are put. There is no warrant in the doctrine for carrying over *this* practical quality into the consequences in which action culminates, and by which it is tested and corrected. A knowing as an act is instrumental to the resultant controlled and more significant situation, this does not imply anything about the intrinsic or the instrumental character of the consequent situation. That is whatever it may be in a given case.

There is nothing novel nor heterodox in the notion that thinking is instrumental. The very word is redolent of an *Organum*—whether *novum* or *veterum*. The term “instrumentality,” applied to thinking, raises at once, however, the question of whether thinking as a tool falls within or without the subject-matter which it shapes into knowledge. The answer of formal logic (adopted moreover by Kant and followed in some way by all neo-Kantian logics) is unambigu-

ous To call logic "formal" means precisely that mind or thought supplies forms foreign to the original subject-matter, but yet required in order that it should have the appropriate form of knowledge In this regard it deviates from the Aristotelian *Organon* which it professes to follow For according to Aristotle, the processes of knowing—of teaching and learning—which lead up to knowledge are but the actualization through the potentialities of the human body of the *same* forms or natures which are previously actualized in Nature through the potentialities of extra-organic bodies Thinking which is not instrumental to truth, which is merely formal in the modern sense, would have been a monstrosity inconceivable to him But the discarding of the metaphysics of form and matter, of cyclic actualizations and eternal species, deprived the Aristotelian "thought" of any place within the scheme of things, and left it an activity with forms alien to subject-matter To conceive of thinking as instrumental to truth or knowledge, and as a tool shaped out of the same subject-matter as that to which it is applied, is but to return to the Aristotelian tradition about logic That the practice of science has in the meantime substituted a logic of experimental discovery (of which definition and classification are themselves but auxiliary tools) for a logic of arrangement and exposition of what is already known, necessitates, however, a very different sort of *Organon* It makes

necessary the conception that the object of knowledge is not something with which thinking sets out, but something with which it ends something which the processes of inquiry and testing, that constitute thinking, themselves produce Thus the object of knowledge is practical in the sense that it depends upon a specific kind of practice for its existence—for its existence as an object of knowledge How practical it may be in any other sense than this is quite another story The *object of knowledge* marks an achieved triumph, a secured control—that holds by the very nature of knowledge What other uses it may have depends upon its own inherent character, not upon anything in the nature of knowledge We do not know the origin and nature and the cure of malaria till we can both produce and eliminate malaria, the *value* of either the production or the removal depends upon the character of malaria in relation to other things And so it is with mathematical knowledge, or with knowledge of politics or art. Their respective objects are not known till they are made in course of the process of experimental thinking Their usefulness when made is whatever, from infinity to zero, experience may subsequently determine it to be

XIV

THE LOGIC OF JUDGMENTS OF PRACTICE

THEIR NATURE

In introducing the discussion, I shall first say a word to avoid possible misunderstandings. It may be objected that such a term as "practical judgment" is misleading, that the term "practical judgment" is a misnomer, and a dangerous one, since all judgments by their very nature are intellectual or theoretical. Consequently, there is a danger that the term will lead us to treat as judgment and knowledge something which is not really knowledge at all and thus start us on the road which ends in mysticism or obscurantism. All this is admitted. I do not mean by practical judgment a type of judgment having a different organ and source from other judgments. I mean simply a kind of judgment having a specific type of subject-matter. Propositions exist relating to *agenda*—to things to do or be done, judgments of a situation demanding action. There are, for example, propositions of the form *M N* should do thus and so, it is better, wiser, more prudent, right, advisable, opportune, expedient, etc., to act thus and so. And this is the type of judgment I denote practical.

It may also be objected that this type of subject-matter is not distinctive, that there is no ground for

marking it off from judgments of the form *SP*, or *mRn* I am willing, again, to admit that such may turn out to be the fact. But meanwhile the *prima facie* difference is worth considering, if only for the sake of reaching a conclusion as to whether or no there is a kind of subject-matter so distinctive as to imply a distinctive logical form. To assume in advance that the subject-matter of practical judgments *must* be reducible to the form *SP* or *mRn* is as assuredly as gratuitous as the contrary assumption. It begs one of the most important questions about the world which can be asked: the nature of time. Moreover, current discussion exhibits, if not a complete void, at least a decided lacuna as to propositions of this type. Mr. Russell has recently said that of the two parts of logic the first enumerates or inventories the different kinds or forms of propositions.¹ It is noticeable that he does not even mention this kind as a possible kind. Yet it is conceivable that this omission seriously compromises the discussion of other kinds.

Additional specimens of practical judgments may be given. He had better consult a physician, it would not be advisable for you to invest in those bonds, the United States should either modify its Monroe Doctrine or else make more efficient military preparations; this is a good time to build a house, if I do that I shall be doing wrong, etc. It is silly to dwell upon the

¹ *Scientific Method in Philosophy*, p. 57

practical importance of judgments of this sort, but not wholly silly to say that their practical importance arouses suspicion as to the grounds of their neglect in discussion of logical forms in general. Regarding them, we may say

1 Their subject-matter implies an incomplete situation. This incompleteness is not psychical. Something is "there," but what is there does not constitute the entire objective situation. As there, it requires something else. Only after this something else has been supplied will the given coincide with the full subject-matter. This consideration has an important bearing upon the conception of the indeterminate and contingent. It is sometimes assumed (both by adherents and by opponents) that the validity of these notions entails that the *given* is itself indeterminate—which appears to be nonsense. The logical implication is that of a subject-matter as yet *unterminated*, unfinished, or not wholly given. The implication is of future things. Moreover, the incompleteness is not personal. I mean by this that the situation is not confined *within* the one making the judgment, the practical judgment is neither exclusively nor primarily about one's self. On the contrary, it is a judgment about one's self only as it is a judgment about the situation in which one is included, and in which a multitude of other factors external to self are included. The contrary assumption is so constantly made about moral judgments

that this statement must appear dogmatic. But surely the *prima facie* case is that when I judge that I should not give money to the street beggar I am judging the nature of an objective situation, and that the conclusion about myself is governed by the proposition about the situation in which I happen to be included. The full, complex proposition includes the beggar, social conditions and consequences, a charity organization society, etc., on exactly the same footing as it contains myself. Aside from the fact that it seems impossible to defend the "objectivity" of moral propositions on any other ground, we may at least point to the fact that judgments of policy, whether made about ourselves or some other agent, are certainly judgments of a *situation* which is temporarily unfinished. "Now is a good time for me to buy certain railway bonds" is a judgment about myself only because it is primarily a judgment about hundreds of factors wholly external to myself. If the genuine existence of such propositions be admitted, the only question about moral judgments is whether or no they are cases of practical judgments as the latter have been defined—a question of utmost importance for moral theory, but not of crucial import for our logical discussion.

2 Their subject-matter implies that the proposition is itself a factor in the completion of the situation, carrying it forward to its conclusion. According as the judgment is that this or that should be done, the

situation will, when completed, have this or that subject-matter. The proposition that it is well to do this is a proposition to treat the given in a certain way. Since the way is established by the proposition, the proposition is a determining factor in the outcome. As a proposition about the supplementation of the given, it is a factor *in* the supplementation—and this not as an extraneous matter, something subsequent to the proposition, but in its own logical force. Here is found, *prima facie* at least, a marked distinction of the practical proposition from descriptive and narrative propositions, from the familiar *SP* propositions and from those of pure mathematics. The latter imply that the proposition does not enter into the constitution of the subject-matter of the proposition. There also is a distinction from another kind of contingent proposition, namely, that which has the form “He has started for your house”; “The house is still burning”, “It will probably rain”. The unfinishedness of the given is implied in these propositions, but it is not implied that the proposition is a factor in determining their completion.

3 The subject-matter implies that it makes a difference how the given is terminated—that one outcome is better than another, and that the proposition is to be a factor in securing (as far as may be) the better. In other words, there is something objectively at stake in the forming of the proposition. A right or wrong *descriptive* judgment (a judgment confined

to the given, whether temporal, spatial, or subsistent) does not affect its subject-matter, it does not help or hinder its development, for by hypothesis it has no development. But a practical proposition affects the subject-matter for better or worse, for it is a judgment as to the condition (the thing to be done) of the existence of the complete subject-matter.¹

4 A practical proposition is binary. It is a judgment that the given is to be treated in a specified way, it is also a judgment that the given admits of such treatment, that it admits of a specified objective termination. It is a judgment, at the same stroke, of end—the result to be brought about—and of means. Ethical theories which disconnect the discussion of ends—as so many of them do—from determination of means, thereby take discussion of ends out of the region of judgment. If there be such ends, they have no intellectual status.

To judge that I should see a physician implies that the given elements of the situation should be completed in a specific way and also that they afford the conditions which make the proposed completion

¹ The analytic realists have shown a peculiar disinclination to discuss the nature of future consequences as terms of propositions. They certainly are not identical with the mental act of referring to them, they are "objective" to it. Do they, therefore, already subsist in some realm of subsistence? Or is subsistence but a name for the fact of logical reference, leaving the determination of the meaning of "subsistence" dependent upon a determination of the meaning of "logical"? More generally, what is the position of analytic realism about the future?

practicable The proposition concerns both resources and obstacles—intellectual determination of elements lying in the way of, say, proper vigor, and of elements which can be utilized to get around or surmount these obstacles The judgment regarding the need of a physician implies the existence of hindrances in the pursuit of the normal occupations of life, but it equally implies the existence of positive factors which may be set in motion to surmount the hindrances and reinstate normal pursuits

It is worth while to call attention to the reciprocal character of the practical judgment in its bearing upon the statement of means From the side of the end, the reciprocal nature locates and condemns utopianism and romanticism what is sometimes called idealism From the side of means, it locates and condemns materialism and predeterminism what is sometimes called mechanism By materialism I mean the conception that the given contains exhaustively the entire subject-matter of practical judgment that the facts in their givenness are all "there is to it" The given is undoubtedly just what it is, it is determinate throughout But it is the given *of* something to be done The survey and inventory of present conditions (of facts) are not something complete in themselves, they exist for the sake of an intelligent determination of what is to be done, of what is required to complete the given To conceive the given in any such way, then, as to imply

that it negates in its given character the possibility of any doing, of any modification, is self-contradictory. As a part of a practical judgment, the discovery that a man is suffering from an illness is not a discovery that he must suffer, or that the subsequent course of events is determined by his illness, it is the indication of a needed and a possible course by which to restore health. Even the discovery that the illness is hopeless falls within this principle. It is an indication not to waste time and money on certain fruitless endeavors, to prepare affairs with respect to death, etc. It is also an indication of search for conditions which will render in the future similar cases remediable, not hopeless. The whole case for the genuineness of practical judgments stands or falls with this principle. It is open to question. But decision as to its validity must rest upon empirical evidence. It cannot be ruled out of court by a dialectic development of the implications of propositions about what is already given or what has already happened. That is, its invalidity cannot be deduced from an assertion that the character of the scientific judgment as a discovery and statement of what is forbids it, much less from an analysis of mathematical propositions. For this method only begs the question. Unless the facts are complicated by the surreptitious introduction of some preconception, the *prima facie* empirical case is that the scientific judgment—the determinate diagnosis—favors instead of

forbidding the doctrine of a possibility of change of the given To overthrow this presumption means, I repeat, to discover specific evidence which makes it impossible And in view of the immense body of empirical evidence showing that we add to control of what is given (the subject-matter of scientific judgment) by means of scientific judgment, the likelihood of any such discovery seems slight

These considerations throw light upon the proper meaning of (practical) idealism and of mechanism Idealism in action does not seem to be anything except an explicit recognition of just the implications we have been considering It signifies a recognition that the given is given *as* obstacles to one course of active development or completion and *as* resources for another course by which development of the situation directly blocked may be indirectly secured It is not a blind instinct of hopefulness or that miscellaneous obscurantist emotionalism often called optimism, any more than it is utopianism It is recognition of the increased liberation and redirection of the course of events achieved through accurate discovery Or, more specifically, it is this recognition operating as a ruling motive in extending the work of discovery and utilizing its results

"Mechanism" means the reciprocal recognition on the side of means It is the recognition of the import within the practical judgment, of the given, of fact, in its determinate character The facts in

their isolation, taken as complete in themselves, are not mechanistic. At most, they just are, and that is the end of them. They are mechanistic as indicating the mechanism, the means, of accomplishing the possibilities which they indicate. Apart from a forward look (the anticipation of the future movement of affairs) mechanism is a meaningless conception. There is no sense in applying the conception to a finished world, to any scene which is simply and only done with. Propositions regarding a past world, just as past (not as furnishing the conditions of what is to be done), might be complete and accurate, but they would be of the nature of a complex catalogue. To introduce, in addition, the conception of mechanism is to introduce the implication of possibilities of future accomplishment.¹

¹ Supposing the question to be that of some molten state of the earth in past geologic ages. Taken as the complete subject-matter of a proposition—or science—the facts discovered cannot be regarded as causative of, or a mechanism of, the appearance of life. For by definition they form a closed system, to introduce reference to a future event is to deny the definition. Contrariwise, a statement of that past condition of the earth as a mechanical condition of the later emergence of life means that that past stage is taken not merely as past, but as in process of transition to its future, as in process of alteration in the direction of life. Change in this direction is an integral part of a statement of the early stage of the earth's history. A purely geologic statement may be quite accurate in its own universe of discourse and yet quite incomplete and hence inaccurate in another universe of discourse. That is to say, a geologist's propositions may accurately set forth a prior state of things, while ignoring any reference to a later state entailed by them. But a would-be philosophy may not ignore the implied future.

5 The judgment of what is to be done implies, as we have just seen, a statement of what the given facts of the situation are, taken as indications of the course to pursue and of the means to be employed in its pursuit. Such a statement demands accuracy. Completeness is not so much an additional requirement as it is a condition of accuracy. For accuracy depends fundamentally upon relevancy to the determination of what is to be done. Completeness does not mean exhaustiveness *per se*, but adequacy as respects end and its means. To include too much, or what is irrelevant, is a violation of the demand for accuracy quite as well as to leave out—to fail to discover—what is important.

Clear recognition of this fact will enable one to avoid certain dialectic confusions. It has been argued that a judgment of given existence, or fact, cannot be hypothetical, that factuality and hypothetical character are contradictions in terms. They would be if the two qualifications were used in the same respect. But they are not. The hypothesis is that the facts which constitute the terms of the proposition of the given are relevant and adequate for the purpose in hand—the determination of a possibility to be accomplished in action. The data may be as factual, as absolute as you please, and yet in no way guarantee that they are the data *of* this particular judgment. Suppose the thing to be done is the formation of a prediction regarding the return of a comet. The prime

difficulty is not in making observations, or in the mathematical calculations based upon them—difficult as these things may be. It is making sure that we have taken as data the observations really implicated in the doing rightly of this particular thing. that we have not left out something which is relevant, or included something which has nothing to do with the further movement of the comet. Darwin's hypothesis of natural selection does not stand or fall with the correctness of his propositions regarding breeding of animals in domestication. The facts of artificial selection may be as stated—in themselves there may be nothing hypothetical about them. But their bearing upon the origin of species *is* a hypothesis. Logically, any factual proposition is a hypothetical proposition when it is made the basis of any inference.

6 The bearing of this remark upon the nature of the truth of practical judgments (including the judgment of what is given) is obvious. Their truth or falsity is constituted by the issue. The determination of end-means (constituting the terms and relations of the practical proposition) is hypothetical until the course of action indicated has been tried. The event or issue of such action *is* the truth or falsity of the judgment. This is an immediate conclusion from the fact that only the issue gives the complete subject-matter. In this case, at least, verification and truth completely coincide—unless there is some serious error in the prior analysis.

This completes the account, preliminary to a consideration of other matters. But the account suggests another and independent question with respect to which I shall make an excursus. How far is it possible and legitimate to extend or generalize the results reached to apply to all propositions of facts? That is to say, is it possible and legitimate to treat all scientific or descriptive statements of matters of fact as implying indirectly if not directly, something to be done, future possibilities to be realized in action? The question as to legitimacy is too complicated to be discussed in an incidental way. But it cannot be denied that there is a possibility of such application, nor that the possibility is worth careful examination. We may frame at least a hypothesis that all judgments of fact have reference to a determination of courses of action to be tried and to the discovery of means for their realization. In the sense already explained all propositions which state discoveries or ascertainments, all categorical propositions, would be hypothetical, and their truth would coincide with their tested consequences effected by intelligent action.

This theory may be called pragmatism. But it is a type of pragmatism quite free from dependence upon a voluntaristic psychology. It is not complicated by reference to emotional satisfactions or the play of desires.

I am not arguing the point. But possibly critics of pragmatism would get a new light upon its meaning

were they to set out with an analysis of ordinary practical judgments and then proceed to consider the bearing of its result upon judgments of facts and essences. Mr Bertrand Russell has remarked¹ that pragmatism originated as a theory about the truth of theories, but ignored the "truths of fact" upon which theories rest and by which they are tested. I am not concerned to question this so far as the origin of pragmatism is concerned. Philosophy, at least, has been mainly a matter of theories, and Mr James was conscientious enough to be troubled about the way in which the meaning of such theories is to be settled and the way in which they are to be tested. His pragmatism was in effect (as Mr Russell recognizes) a statement of the need of applying to philosophic theories the same kinds of test as are used in the theories of the inductive sciences. But this does not preclude the application of a like method to dealing with so-called "truths of fact." Facts may be facts, and yet not be the facts of the inquiry in hand. In all scientific inquiry, however, to call them facts or data or truths of fact signifies that they are taken as the *relevant* facts of the inference to be made. If (as this would seem to indicate) they are then implicated however indirectly in a proposition about what is to be done, they are themselves theoretical in logical quality. Accuracy of statement and correctness of reasoning would then be factors in truth, but so also

¹ *Philosophical Essays*, pp 104, 105

would be verification. Truth would be a triadic relation, but of a different sort from that expounded by Mr. Russell. For accuracy and correctness would both be functions of verifiability.

JUDGMENTS OF VALUE

I

It is my purpose to apply the conclusions previously drawn as to the implications of practical judgment to the subject of judgments of value. First, I shall try to clear away some sources of misunderstanding.

Unfortunately, however, there is a deep-seated ambiguity which makes it difficult to dismiss the matter of value summarily. The *experience* of a good and the *judgment* that something is a value of a certain kind and amount have been almost inextricably confused. The confusion has a long history. It is found in mediaeval thought, it is revived by Descartes; recent psychology has given it a new career. The senses were regarded as modes of knowledge of greater or less adequacy, and the feelings were regarded as modes of sense, and hence as modes of cognitive apprehension. Descartes was interested in showing, for scientific purposes, that the senses are not organs of apprehending the qualities of bodies as such, but only of apprehending their relation to the well-being of the sentient organism. Sensations of pleasure and pain, along with those of hunger, thirst, etc., most easily lent themselves to this treatment, colors,

tones, etc , were ~~then~~[~] assimilated Of them all he says "These perceptions of sense have been placed within me by nature for the purpose of *signifying* what things are beneficial or harmful."¹ Thus it was possible to identify the real properties of bodies with their geometrical ones, without exposing himself to the conclusion that God (or nature) deceives us in the perception of color, sound, etc These perceptions are only intended to teach us what things to pursue and avoid, and as *such* apprehensions they are adequate His identification of any and every experience of good with a judgment or cognitive apprehension is clear in the following words "When we are given news the mind first judges of it and if it is good it rejoices "²

This is a survival of the scholastic psychology of the *vis aestimativa* Lotze's theory that the emotions, as involving pleasure and pain, are organs of value judgments, or in more recent terminology, that they are cognitive appreciations of worth (corresponding to immediate apprehensions of sensory qualities) presents the same tradition in a new terminology

As against all this, the present paper takes its stand with the position stated by Hume, in the following words "A passion is an original existence, or, if you will, modification of existence, and contains not any representative quality, which renders it a copy of any

¹ *Sixth Meditation*

² *Principles of Philosophy*, p 90

other existence or modification. When I am angry I am actually possessed with the passion, and in that emotion have no more a reference to any other object, than when I am thirsty, or sick, or more than five feet high."¹ In so doing, I may seem to some to be begging the question at issue. But such is surely the *prima facie* fact of the matter. Only a prior dogma to the effect that every conscious experience is, *ipso facto*, a form of cognition leads to any obscuration of the fact, and the burden of proof is upon those who uphold the dogma.²

A further word upon "appreciation" seems specially called for in view of the currency of the doctrine that "appreciation" is a peculiar kind of knowledge, or cognitive revelation of reality peculiar in having a distinct type of reality for its object and in having for its organ a peculiar mental condition differing from

¹ *Treatise of Human Nature*, Part III, sec. 111.

² It is perhaps poor tactics on my part to complicate this matter with anything else. But it is evident that "passions" and pains and pleasures may be used as *evidences* of something beyond themselves (as may the fact of being more than five feet high) and so get a representative or cognitive status. Is there not also a *prima facie* presumption that all sensory qualities are of themselves bare existences or occurrences without cognitive pretension, and that they acquire the latter status as signs or evidence of something else? Epistemological idealists or realists who admit the non-cognitive character of pleasure and pain would seem to be under special obligations carefully to consider the thesis of the non-cognitive nature of all sensory qualities except as they are employed as indications or indexes of some other thing. This recognition frees logic from the epistemological discussion of secondary qualities.

the intelligence of everyday knowledge and of science. Actually, there do not seem to be any grounds for regarding appreciation as anything but an intentionally enhanced or intensified experience of an object. Its opposite is not descriptive or explanatory knowledge, but *depreciation*—a degraded realization of an object. A man may climb a mountain to get a better realization of a landscape, he may travel to Greece to get a realization of the Parthenon more full than that which he has had from pictures. Intelligence, knowledge, may be involved in the steps taken to get the enhanced experience, but that does not make the landscape or the Parthenon as fully savored a cognitive object. So the fulness of a musical experience may depend upon prior critical analysis, but that does not necessarily make the hearing of music a kind of non-analytic cognitive act. Either appreciation means just an intensified experience, or it means a kind of criticism, and then it falls within the sphere of ordinary judgment, differing in being applied to a work of art instead of to some other subject-matter. The same mode of analysis may be applied to the older but cognate term "intuition." The terms "acquaintance" and "familiarity" and "recognition" (acknowledgment) are full of like pitfalls of ambiguity.

In contemporary discussion of value-judgments, however, appreciation is a peculiarly treacherous term. It is first asserted (or assumed) that ~~all~~ experiences of good are modes of knowing that good

is a term of a proposition. Then when experience forces home the immense difference between evaluation as a critical process (a process of inquiry for the determination of a good precisely similar to that which is undertaken in science in the determination of the nature of an event) and ordinary experience of good and evil, appeal is made to the difference between direct apprehension and indirect or inferential knowledge, and "appreciation" is called in to play the convenient rôle of an immediate cognitive apprehension. Thus a second error is used to cover up and protect a primary one. To savor a thing fully—as Arnold Bennett's heroines are wont to do—is no more a knowing than is the chance savoring which arises when things smelled are found good, or than is being angry or thirsty or more than five feet high. All the language which we can employ is charged with a force acquired through reflection. Even when I speak of a direct experience of a good or bad, one is only too likely to read in traits characterizing a thing which is found in consequence of thinking, to be good, one has to use language simply to stimulate a recourse to a direct experiencing in which language is not depended upon. If one is willing to make such an imaginative excursion—no one can be compelled—he will note that *finding* a thing good apart from reflective judgment means simply treating the thing in a certain way, hanging on to it, dwelling upon it, welcoming it and acting to perpetuate its presence, taking delight in it

It is a way of behaving toward it, a mode of organic reaction. A psychologist may, indeed, bring in the emotions, but if his contribution is relevant it will be because the emotions which figure in his account are just part of the primary organic reaction to the object. In contrary fashion, to find a thing bad (in a direct experience as distinct from the result of a reflective examination) is to be moved to reject it, to try to get away from it, to destroy or at least to displace it. It connotes not an act of apprehension but an act of repugning, of repelling. To term the thing good or evil is to state the fact (noted in recollection) that it was actually involved in a situation of organic acceptance or rejection, with whatever qualities specifically characterize the act.

All this is said because I am convinced that contemporary discussion of values and valuation suffers from confusion of the two radically different attitudes—that of direct, active, non-cognitive experience of goods and bads and that of valuation, the latter being simply a mode of judgment like any other form of judgment, differing in that its subject-matter happens to be a good or a bad instead of a horse or planet or curve. But unfortunately for discussions, “to value” means two radically different things: to prize and appraise, to esteem and to estimate: to find good in the sense described above, and to judge it to be good, to *know* it as good. I call them radically different because to prize names a

a practical, non-intellectual attitude, and to appraise names a judgment. That men love and hold things dear, that they cherish and care for some things, and neglect and condemn other things, is an undoubted fact. To call these things values is just to repeat that they are loved and cherished, it is not to give a reason for their being loved and cherished. To call them values and then import into them the traits of objects of valuation, or to import into values, meaning valuated objects, the traits which things possess as held dear, is to confuse the theory of judgments of value past all remedy

And before coming to the more technical discussion, the currency of the confusion and the bad result consequences may justify dwelling upon the matter. The distinction may be compared to that between eating something and investigating the food properties of the thing eaten. A man eats something, it may be said that his very eating implies that he *took* it to be food, that he judged it, or regarded it cognitively, and that the question is just whether he judged truly or made a false proposition. Now if anybody will condescend to a concrete experience he will perceive how often a man eats *without* thinking, that he puts into his mouth what is set before him from habit, as an infant does from instinct. An onlooker or anyone who reflects is justified in saying that he *acts as if* he judged the material to be food. He is not justified in saying that any judgment or

intellectual determination has entered in. He has acted, he has behaved toward something as food that is only to say that he has put it in his mouth and swallowed it instead of spewing it forth. The object may then be called food. But this does not mean either that *it is* food (namely, digestible and nourishing material) or that the eater judged it to be food and so formed a proposition which is true or false. The proposition would arise only in case he is in some doubt, or if he reflects that in spite of his immediate attitude of aversion the thing is wholesome and his system needs recuperation, etc. Or later, if the man is ill, a physician may inquire what he ate, and pronounce that something not food at all, but poison.

In the illustration employed, there is no danger of any harm arising from using the retroactive term "food", there is no likelihood of confusing the two senses "actually eaten" and "nourishing article". But with the terms "value" and "good" there is a standing danger of just such a confusion. Overlooking the fact that good and bad as *reasonable* terms involve a *relationship to other things* (exactly similar to that implied in calling a particular article food or poison), we suppose that when we are reflecting upon or inquiring into the good or value of some act or object, we are dealing with something as simple, as self-inclosed, as the simple act of immediate prizing or welcoming or cherishing performed without rhyme or reason, from instinct or habit. In truth just as

determining a thing *to be* food means considering its relations to digestive organs, to its distribution and ultimate destination in the system, so determining a thing found good (namely, treated in a certain way) *to be* good means precisely ceasing to look at it as a direct, self-sufficient thing and considering it in its consequences—that is, in its relations to a large set of other things. If the man in eating consciously implies that what he eats is food, he anticipates or predicts certain consequences, with more or less adequate grounds for so doing. He passes a judgment or apprehends or knows—truly or falsely. So a man may not only enjoy a thing, but he may judge the thing enjoyed to be good, to be a value. But in so doing he is going beyond the thing immediately present and making an inference to other things, which, he implies, are connected with it. The thing taken into the mouth and stomach *has* consequences whether a man thinks of them or not. But he does not *know* the thing he eats—he does not make it a term of a certain character—unless he thinks of the consequences and connects them with the thing he eats. If he just stops and says “Oh, how good this is,” he is not saying anything about the object except the fact that he enjoys eating it. We may if we choose regard this exclamation as a reflection or judgment. But if it is intellectual, it is asserted for the sake of enhancing the enjoyment, it is a means to an end. A very hungry man will generally satisfy his appetite to some extent

before he indulges in even such rudimentary propositions¹

II

But we must return to a placing of our problem in this context. My theme is that a judgment of value is simply a case of a practical judgment, a judgment about the doing of something. This conflicts with the assumption that it is a judgment about a particular kind of existence independent of action, concerning which the main problem is whether it is subjective or objective. It conflicts with every tendency to make the determination of the right or wrong course of action (whether in morals, technology, or scientific inquiry) dependent upon an independent determination of some ghostly things called value-objects—whether their ghostly character is attributed to their existing in some transcendental eternal realm or in some realm called states of mind. It asserts that value-objects mean simply objects as judged to possess a certain *force* within a situation temporally

¹ To readers who have grasped the thought of my argument, it may not be meaningless to say that the typical idealistic fallacy is to import into the direct experience the results of the intellectual or reflective examination, while that of realism is to treat the reflective operation as dealing with precisely the same subject-matter as the original act was concerned with—taking the good of "reason" and the good of immediate behavior to be the same sort of things. And both fallacies will result from any assimilation of two different acts to one another through giving them both the title "knowledge," and hence treating the difference between them as simply the difference between a direct apprehension and a mediated one.

developing toward a determinate result To *find* a thing good is, I repeat, to attribute or impute nothing to it It is just to do something to it But to consider *whether* it is good and how good it is, is to ask how it, *as if acted upon*, will operate in promoting a course of action

Hence the great contrast which may exist between a good or an immediate experience and an evaluated or judged good The rain may be most uncomfortable (just *be* it, as a man is more than five feet tall) and yet be "good" for growing crops—that is, favor or promote their movement in a given direction This does not mean that two contrasting judgments of value are passed It means that *no* judgment has yet taken place If, however, I am moved to pass a value-judgment I should probably say that in spite of the disagreeableness of getting wet, the shower ~~is a good thing~~ I am now judging it as a *means* in two contrasting situations, as a means with respect to two ends I compare my discomfort as a *consequence* of the rain with the prospective crops as another consequence, and say "let the latter consequence be" I identify myself as agent with it, rather than with the immediate discomfort of the wetting It is quite true that in this case I cannot do anything about it, my identification is, so to speak, sentimental rather than practical so far as stopping the rain or growing the crops is concerned But in effect it is an assertion that one would not on

account of the discomfort of the rain stop it, that one would, if one could, encourage its continuance
Go it, rain, one says

The specific intervention of action is obvious enough in plenty of other cases. It occurs to me that this agreeable "food" which I am eating isn't a food for me, it brings on indigestion. It functions no longer as an *immediate* good; as something to be accepted. If I continue eating, it will be after I have deliberated. I have considered it as a means to two conflicting possible consequences, the present enjoyment of eating and the later state of health. One or other is possible, not both—though of course I may "solve" the problem by persuading myself that in this instance they are congruent. The value-object now means thing judged to be a means of procuring this or that end. As prizing, esteeming, holding dear denote ways of acting, so valuing denotes a passing judgment upon such acts with reference to their connection with other acts, or with respect to the continuum of behavior in which they fall. Valuation means change of mode of behavior from direct acceptance and welcoming to doubting and looking into—acts which involve postponement of direct (or so-called overt) action and which imply a future act having a different *meaning* from that just now occurring—for even if one decides to continue in the previous act its meaning-content is different when it is chosen after reflective examination.

A practical judgment has been defined as a judgment of what to do, or what is to be done' a judgment respecting the future termination of an incomplete and in so far indeterminate situation. To say that judgments of value fall within this field is to say two things one, that the ~~judgment of value is never complete in itself~~, but always in behalf of determining what is to be done, the other, that judgments of value (as distinct from the direct experience of something as good) imply that value is not anything pre-viously given, but is something to be given by future action, itself conditioned upon (varying with) the judgment. This statement may appear to contradict the recent assertion that a value-object for knowledge means one investigated as a means to competing ends. For such a means it already is, the lobster *will* give me present enjoyment and future indigestion *if* I eat it. But as long as I judge, *value* is indeterminate. The question is not what the thing will do—I may be quite clear about that—it is whether to perform the act which will actualize its potentiality. What will I have the situation *become* as between alternatives? And that means what force shall the thing as means be given? Shall I take it as means to present enjoyment, or as a (negative) condition of future health? When its status in these respects is determined, its value is determined, judgment ceases, action goes on.

Practical judgments do not therefore primarily concern themselves with the value of *objects*, but

with the course of action demanded to carry an incomplete situation to its fulfilment. The adequate control of such judgments may, however, be facilitated by judgment of the worth of objects which enter as ends and means into the action contemplated. For example, my primary (and ultimate) judgment has to do, say, with buying a suit of clothes: whether to buy and, if so, what? The question is of better and worse with respect to alternative courses of action, not with respect to various objects. But the judgment will be a judgment (and not a chance reaction) in the degree in which it takes for its intervening subject-matter the value-status of various objects. What are the prices of given suits? What are their styles in respect to current fashion? How do their patterns compare? What about their durability? How about their respective adaptability to the chief wearing use I have in mind? Relative, or comparative, durability, cheapness, suitability, style, aesthetic attractiveness constitute value traits. They are traits of objects not *per se*, but *as entering into a possible and foreseen completing of the situation*. Their value is their force in precisely this function. The decision of better and worse is the determination of their respective capacities and intensities *in this regard*. Apart from their status in this office, they have no traits of value for knowledge. A determination of better value as found in some one suit is equivalent to (has the force of) a decision as to what it is better

to do. It provided the lacking stimulus so that action occurs, or passes from its indeterminate-indecisive-state into decision.

Reference to the terms "subjective" and "objective" will, perhaps, raise a cloud of ambiguities. But for this very reason it may be worth while to point out the ambiguous nature of the term objective as applied to valuations. Objective may be identified, quite erroneously, with qualities existing outside of and independently of the situation in which a decision as to a future course of action has to be reached. Or, objective may denote the status of qualities of an object *in respect* to the situation to be completed through judgment. Independently of the situation requiring practical judgment, clothes already have a given price, durability, pattern, etc. These traits are not affected by the judgment. They exist, they are given. But as given they are *not* determinate values. They are not *objects of* valuation, they are *data for* a valuation. We may have to take pains to discover that these given qualities are, but their discovery is in order that there may be a subsequent judgment of value. Were they already definite values, they would not be estimated, they would be stimuli to direct response. If a man had already decided that cheapness constituted value, he would simply take the cheapest suit offered. What he judges is the value of cheapness, and this depends upon its weight or importance in the situation requiring

action, as compared with durability, style, adaptability, etc. Discovery of shoddy would not affect the *de facto* durability of the goods, but it would affect the value of cheapness—that is, *the weight assigned that trait in influencing judgment*—which it would not do, if cheapness already had a definite value. A value, in short, means a *consideration*, and a consideration does not mean an existence merely, but an existence having a claim upon judgment. Value judged is not existential quality noted, but is the influence attached by judgment to a given existential quality in determining judgment.

The conclusion is not that value is subjective, but that it is practical. The situation in which judgment of value is required is not mental, much less fanciful. I can but think that much of the recent discussion of the objectivity of value and of value-judgments rests upon a false psychological theory. It rests upon giving certain terms meanings that flow from an introspective psychology which accepts a realm of purely private states of consciousness, private not in a social sense (a sense implying courtesy or mayhap secrecy toward others), but existential independence and separateness. To refer value to choice or desire, for example, is in that case to say that value is subjectively conditioned. Quite otherwise, if we have steered clear from such a psychology. Choice, decision, means primarily a certain act, a piece of behavior on the part of a particular thing. That

a horse chooses to eat hay means only that it eats hay, that the man chooses to steal means (at least) that he tries to steal. This trial may come, however, *after* an intervening act of reflection. It then has a certain intellectual or cognitive quality. But it may mean simply the bare fact of an action which is retrospectively called a choice: as a man, in spite of all temptation to belong to another nation, chooses to be born an Englishman, which, if it has any sense at all, signifies a choice to continue in a line adopted without choice. Taken in this latter sense (in which case, terms like choice and desire refer to ways of behavior), their use is only a specification of the general doctrine that all valuation has to do with the determination of a course of action. Choice, preference, is originally only a bias in a given direction, a bias which is no more subjective or psychical than is the fact that a ball thrown is swerving in a particular direction rather than in some other curve. It is just a name for the differential character of the action. But let continuance in a certain line of action become questionable, let, that is to say, it be regarded as a means to a future consequence, which consequence has alternatives, and then choice gets a logical or intellectual sense, a *mental* status if the term "mental" is reserved for acts having this intellectualized quality. Choice still means the fixing of a course of action, it means at least a *set* to be released as soon as physically possible. Otherwise

man has not chosen, but has quieted himself into a belief that he has chosen in order to relieve himself of the strain of suspense

Exactly the same analysis applies to desire. Diverse anticipated ends may provoke divided and competing present reactions, the organism may be torn between different courses, each interfering with the completion of the other. This intra-organic pulling and hauling, this strife of active tendencies, is a genuine phenomenon. The pull in a given direction measures the immediate hold of an anticipated termination or end upon us, as compared with that of some other. If one asked after the mechanism of the valuing process, I have no doubt that the answer would be in terms of desires thus conceived. But unless everything relating to the activity of a highly organized being is to be denominated subjective, I see no ground for calling it subjective. So far as I can make out, the emphasis upon a psychological treatment of value and valuation in a subjective sense is but a highly awkward and negative way of maintaining a positive truth. That value and valuation fall within the universe of *action*—that as welcoming, accepting, is an act, so valuation is a present act determining an act *to be* done, a present act taking place because the future act is uncertain and incomplete.

It does follow from this fact that valuation is not simply a *recognition* of the force or efficiency of a means

with respect to continuing a process. For unless there is *question* about its continuation, about its termination, valuation will not occur. And there is no question save where activity is hesitant in direction because of conflict within it. Metaphorically we may say that rain is good to lay the dust, identifying force or efficiency with value. I do not believe that valuations occur and values are brought into being save in a continuing situation where things have potency for carrying forward processes. There is a close relationship between prevailing, valiancy, valency, and value. But the term "value" is not a mere reduplication of the term "efficiency"—it adds something. When we are moving toward a result and at the same time are stimulated to move toward something else which is incompatible with it (as in the case of the lobster as a cause of both enjoyment and indigestion), a thing has a dual potency. Not until the end has been established is the value of the lobster settled, although there need be no doubt about its efficiencies.

As was pointed out earlier, the practical judgment determines means and end at the same time. How then can value be given, as efficiency is given, until the end is chosen? The rain is (metaphorically) valuable for laying dust. Whether it is valuable for us to have the dust laid—and if so, how valuable—we shall never know until some activity of our own which is a factor in dust-laying comes into conflict with an incompatible activity. Its value is its force,

indeed, but it is its force in moving us to one end *rather* than to another. Not every potency, in other words, but potency with the specific qualification of falling within judgment about future action, means value or valuable thing. Consequently there is no value save in situations where desires and the need of deliberation in order to choose are found, and yet this fact gives no excuse for regarding desire and deliberation and decision as subjective phenomena.

To use an Irish bull, as long as a man *knows* what he desires there is no desire, there is movement or endeavor in a given direction. Desire is desires, and simultaneous desires are incompatible, they mark, as we have noted, competing activities, movements in directions, which cannot both be extended. Reflection is a process of finding out what we want, what, as we say, we *really* want, and this means the formation of new desire, a new direction of action. In this process, things *get* values—something they did not possess before, although they had their efficiencies.

At whatever risk of shock, this doctrine should be exposed in all its nakedness. To judge value is to engage in instituting a determinate value where none is given. It is not necessary that antecedently given values should be the data of the valuation, and where they are given data they are only terms in the determination of a not yet existing value. When a man is ill and after deliberation concludes that it be well to see

a doctor, the doctor doubtless exists antecedently. But it is not the doctor who is judged to be the good of the situation, ~~but the seeing of the doctor~~ a thing which, by description, exists only because of an act dependent upon a judgment. Nor is the health the man antecedently possessed (or which somebody has) the thing which he judges to be a value, the thing judged to be a value is the restoring of health—something by description not yet existing. The results flowing from his past health will doubtless influence him in reaching his judgment that it will be a good to have restored health, but they do not constitute the good which forms his subject-matter and object of his judgment. He may judge that they *were* good without judging that they are now good, for to be judged now good means to be judged to be the object of a course of action still to be undertaken. And to *judge* that they were good (as distinct from merely recalling certain benefits which accrued from health) is to judge that *if* the situation had required a reflective determination of a course of action one would have judged health an existence to be attained or preserved by action. There are dialectic difficulties which may be raised about judgments of this sort. For they imply the seeming paradox of a judgment whose proper subject-matter is its own determinate formation. But nothing is gained by obscuring the fact that such is the nature of the practical judgment: it is a judgment of what and how to judge—of

the weight to be assigned to various factors in the determination of judgment. It would be interesting to inquire into the question whether this peculiarity may not throw light upon the nature of "consciousness," but into that field we cannot now go.

III

From what has been said, it immediately follows, of course, that a determinate value is instituted as a decisive factor with respect to what is to be done. Wherever a determinate good exists, there is an adequate stimulus to action, and no judgment of what is to be done or of the value of an object is called for. It is frequently assumed, however, that valuation is a process of applying some fixed or determinate value to the various competing goods of a situation, that valuation implies a prior standard of value and consists in comparing various goods with the standard as the supreme value. This assumption requires examination. If it is sound it deprives the position which has been taken of any validity. For it renders the judgment of what to do a matter of applying a value existing ready-made, instead of making—as we have done—the valuation a determination within the practical judgment. The argument would run this way. Every practical judgment depends upon a judgment of the value of the end to be attained, this end may be such only proximately, but that implies something else judged to be good, and so, logically,

till we have arrived at the judgment of a supreme good, a final end or *summum bonum*. If this statement correctly describes the state of the case there can be no doubt that a practical judgment depends upon a prior recognition of value, consequently the hypothesis upon which we have been proceeding reverses the actual facts

The first thing by way of critical comment is to point out the ambiguity in the term "end" I should like to fall back upon what was said earlier about the thoroughly reciprocal character of means and end in the practical judgment. If this be admitted it is also admitted that only by a judgment of means—things having value in the carrying of an indeterminate situation to a completion—is the end determined in judgment. But I fear I cannot count upon this as granted. So I will point out that "end" may mean either the *de facto* limit to judgment, which by definition does not enter into judgment at all, or it may mean the last and completing object of judgment, the conception of that object in which a transitive incompletely given situation would come to rest. Of end in the first sense, it is to be said that it is not a value at all, of end in the second sense, that it is identical with a finale of the kind we have just been discussing or that it is determined in judgment, not a value given by which to control the judgment. It may be asserted that in the illustration used some typical suit of clothes is the value which affords the

standard of valuation of all the suits which are offered to the buyer, that he passes judgment on their value as compared with the standard suit as an end and supreme value. This statement brings out the ambiguity just referred to. The need of something to wear is the *stimulus* to the judgment of the value of suits offered, and possession of a suit ~~puts an end to judgment~~. It is an end *of* judgment in the objective, not in the possessive, sense of the preposition "of", it is an end not in the sense of aim, but in the sense of a terminating limit. When possession begins, judgment has already ceased. And if argument *ad verucundiam* has any weight I may point out that this is the doctrine of Aristotle when he says we never deliberate about ends, but only about means. That is to say, in all deliberation (or practical judgment or inquiry) there is always something outside of judgment which fixes its beginning and end or terminus. And I would add that, according to Aristotle, deliberation always ceases when we have come to the "first link in the chain of causes, which is last in the order of discovery," and this means "when we have traced back the chain of causes [means] to ourselves." In other words, the last end-in-view is always that which operates as the direct or immediate means of setting our own powers in operation. The end-in-view upon which judgment of action settles down is simply the adequate or complete means to the doing of something.

We do deliberate, however, about *aims*, about ends-in-view—a fact which shows their radically different nature from ends as limits to deliberation. The aim in the present instance is not the suit of clothes, but the *getting of a proper suit*. That is what is precisely estimated or valued, and I think I may claim to have shown that the determination of this aim is identical with the determination of the value of a suit through comparison of the values of cheapness, durability, style, pattern of different suits offered. Value is not determined by comparing various suits with an ideal model, but by comparing various suits with respect to cheapness, durability, adaptability *with one another*—involving, of course, reference also to length of purse, suits already possessed, etc., and other specific elements in the situation which demands that something be done. The purchaser may, of course, have settled upon something which serves as a model before he goes to buy, but that only means that his judging has been done beforehand, the model does not then function in judgment, but in his act as stimulus to immediate action. And there is a consideration here involved of the utmost importance as to practical judgments of the moral type. The more completely the notion of the model is formed outside and irrespective of the specific conditions which the situation of action presents, the less intelligent is the act. Most men might have their ideals of the model changed somewhat in the face of the actual offering,

even in the case of buying clothes. The man who is not accessible to such change in the case of moral situations has ceased to be a moral agent and become a reacting machine. In short, the standard of valuation is formed in the process of practical judgment or valuation. It is not something taken from outside and applied within it—such application means there is no judgment.

IV

Nothing has been said thus far about a standard. Yet the conception of a standard, or a measure, is so closely connected with valuation that its consideration affords a test of the conclusions reached. It must be admitted that the concepts of the nature of a standard pointed to by the course of the prior discussion is not in conformity with current conceptions. For the argument points to a standard which is determined within the process of valuation, not outside of it, and hence not capable of being employed ready-made, therefore, to settle the valuing process. To many persons, this will seem absurd to the point of self-contradiction. The prevailing conception, however, has been adopted without examination, it is a preconception. If accepted, it deprives judgment and knowledge of all significant import in connection with moral action. If the standard is already given, all that remains is its mechanical application to the case in hand—as one would apply a yard

rule to dry-goods. Genuine moral uncertainty is then impossible, where it seems to exist, it is only a name for a moral unwillingness, due to inherent viciousness, to recognize and apply the rules already made and provided, or else for a moral corruption which has enfeebled man's power of moral apprehension. When the doctrine of standards prior to and independent of moral judgments is accompanied by these other doctrines of original sin and corruption, one must respect the thoroughgoing logic of the doctrine. Such is not, however, the case with the modern theories which make the same assumption of standards preceding instead of resulting from moral judgments, and which ignore the question of uncertainty and error in their apprehension. Such considerations do not, indeed, decide anything, but they may serve to get a more unprejudiced hearing for a hypothesis which runs counter to current theories, since it but formulates the trend of current practices in their increasing tendency to make the act of intelligence the central factor in morals.

Let us, accordingly, consider the alternatives to regarding the standard of value as something evolved in the process of reflective valuation. How can such a standard be known? Either by an a priori method of intuition, or by abstraction from prior cases. The latter conception throws us into the arms of hedonism. For the hedonistic theory of the standard of value derives its logical efficiency

from the consideration that the notion of a prior and fixed standard (one which is not determined within the situation by reflection) forces us back upon antecedent irreducible pleasures and pains which alone are values definite and certain enough to supply standards. They alone are simple enough to be independent and ultimate. The apparently common-sense alternative would be to take the "value" of prior situations *in toto*, say, the value of an act of kindness to a sufferer. But any such good is a function of the total unanalyzed situation, it has, consequently, no application to a new situation unless the new exactly repeats the old one. Only when the "good" is resolved into simple and unalterable units, in terms of which old situations can be equated to new ones on the basis of the number of units contained, can an unambiguous standard be found.

The logic is unimpeachable, and points to irreducible pleasures and pains as the standard of valuation. The difficulty is not in the logic but in empirical facts, facts which verify our prior contention. Conceding, for the sake of argument, that there are definite existences such as are called pleasures and pains, they are *not* value-objects, but are only things to be valued. Exactly the same pleasure or pain, as an existence, has different values at different times according to the way in which it is judged. What is the value of the pleasure of eating the lobster as compared with the pains of indigestion? The rule tells us, of course,

to break up the pleasure and pain into elementary units and count ¹ Such ultimate simple units seem, however, to be about as much within the reach of ordinary knowledge as atoms or electrons are within the grasp of the man of the street Their resemblance to the ultimate, neutral units which analytic psychologists have postulated as a methodological necessity is evident Since the value of even such a definite entity as a toothache varies according to the organization constructed and presented in reflection, it is clear that ordinary empirical pleasures and pains are highly complex

This difficulty, however, may be waived We may even waive the fact that a theory which set out to be ultra-empirical is now enmeshed in the need for making empirical facts meet dialectical requirements Another difficulty is too insuperable to be waived

¹ Analytic realism ought to be favorable to such a hedonism, the fact that present-day analytic realists are not favorable would seem to indicate that they have not taken their logic seriously enough, but have been restrained, by practical motives, from applying it thoroughly To say that the moral life presents a high degree of organization and integration is to say something which is true, but is also to say something which by the analytic logic calls for its resolution into ultimate and independent simples Unless they accept the pleasures and pains of Bentham as such ultimates, they are bound to present acceptable substitutes But here they tend to shift their logic and to make the fulfilment of some *organization* (variously defined) the standard good Consistency would then admit the hypothesis that in *all* cases an eventual organization rather than antecedent simples supply the standard of knowledge Meanwhile the term "fulfilment" (or any similar term) stands as an acknowledgment that the organization in question is not something ontologically prior but is one yet to be achieved

In any case the quantity of elementary existences which constitutes the criterion of measurement is dependent upon the very judgment which is assumed to be regulated by it. The standard of valuation is the units which will *result* from an act, they are future consequences. Now the character of the agent judging is one of the conditions of the production of these consequences. A callous person not only will not foresee certain consequences, and will not be able to give them proper weight, but he does not afford the same condition of their occurrence which is constituted by a sensitive man. It is quite possible to employ judgment so as to produce acts which will increase this organic callousness. The analytic conception of the moral criterion provides—logically—for deliberate blunting of susceptibilities. If the matter at issue is simply one of number of units of pleasure over pain, arrange matters so that certain pains will not, as matter of fact, be felt. While this result may be achieved by manipulation of extra-organic conditions, it may also be effected by rendering the organism insensitive. Persistence in a course which in the short run yields uneasiness and sympathetic pangs, will in the long run eliminate these pains and leave a net pleasure balance.

This is a time-honored criticism of hedonism. My present concern with it is purely logical. It shows that the attempt to bring over from past objects the elements of a standard for valuing future conse-

quences is a hopeless one. The express object of a valuation-judgment is to release factors which being new, cannot be measured on the basis of the past alone. This discussion of the analytic logic as applied in morals would, however, probably not be worth while did it not serve to throw into relief the significance of any appeal to fulfilment of a system or organization as *the moral good—the standard*. Such an appeal, if it is wary, is an appeal to the present situation as *undergoing that reorganization that will confer upon it the unification which it lacks*, to organization as something to be brought about, to be made. And it is clear that this appeal meets all the specifications of judgments of practice as they have been described. The organization which is to be fulfilled through action is an organization which, at the time of judging, is present in conception, in idea—in, that is, reflective inquiry as a phase of reorganizing activity. And since its presence in conception is both a condition of the organization aimed at *and* a function of the adequacy of the reflective inquiry, it is evident that there is here a confirmation of our statement that the practical judgment is a judgment of what and how to judge as an integral part of the completion of an incomplete temporal situation. More specifically, it also appears that the standard is a rule for conducting inquiry to its completion. It is a counsel to make examination of the operative factors complete, a warning against suppressing recognition of any of

them. However a man may impose upon himself or upon others, a man's real measure of value is exhibited in what he *does*, not in what he consciously thinks or says. For the doing is the *actual* choice. It is the completed reflection.

It is comparatively easy at the present time in moral theory to slam both hedonism and apriorism. It is not so easy to see the logical implications of the alternative to them. The conception of an organization of interests or tendencies is often treated as if it were a conception which is definite in subject-matter as well as clear-cut in form. It is taken not as a rule for procedure in inquiry, a direction and a warning (which it is), but as something all of whose constituents are already given for *knowledge*, even though not given in fact. The act of fulfilling or realizing must then be treated as devoid of intellectual import. It is a mere doing, not a learning and a testing. But how can a situation which is incomplete in fact be completely known until it *is* complete? Short of the fulfilment of a conceived organization, how can the conception of the proposed organization be anything more than a working hypothesis, a method of treating the given elements in order to see what happens? Does not every notion which implies the possibility of an apprehension of knowledge of the end to be reached¹ also imply either an *a priori*

¹ It must not be overlooked that a mere reminder of an end previously settled upon may operate as a sufficient stimulus to

revelation of the nature of that end, or else that organization is nothing but a whole composed of elementary parts already given—the logic of hedonism?

The logic of subsumption in the physical sciences meant that a given state of things could be compared with a ready-made concept as a model—the phenomena of the heavens with the implications of, say, the circle. The methods of experimental science broke down this motion, they substituted for an alleged regulative model a formula which was the integrated function of the particular phenomena themselves, a formula to be used as a method of further observations and experiments and thereby tested and developed. The unwillingness to believe that, in a similar fashion, moral standards or models can be trusted to develop out of the specific situations of action shows how little the general logical force of the method of science has been grasped. Physical knowledge did not as matter of fact advance till the dogma of models or forms as standards of knowledge had been ousted. Yet we hang tenaciously to a like doctrine in morals for fear of moral chaos. It once seemed to be impossible that the disordered phenomena of perception could generate a knowledge of law and order, it was

action. It is probably this act of calling the end to mind which the realist confuses with knowledge, and therefore terms apprehension. But there is nothing cognitive about it, any more than there is in pressing a button to give the signal for an act already decided upon.

supposed that independent principles of order must be supplied and the phenomena measured by approach to or deviation from the fixed models. The ordinary conception of a standard in practical affairs is a precise analogue. Physical knowledge started on a secure career when men had courage to start from the irregular scene and to treat the suggestions to which it gave rise as methods for instituting new observations and experiences. Acting upon the suggested conceptions analyzed, extended, and ordered phenomena and thus made improved conceptions—methods of inquiry—possible. It is reasonable to believe that what holds moral knowledge back is above all the conception that there are standards of good given to knowledge apart from the work of reflection in constructing methods of action. As the bringer of bad news gets a bad name, being made to share in the production of the evil which he reports, so honest acknowledgment of the uncertainty of the moral situation and of the hypothetical character of all rules of moral mensuration prior to acting upon them, is treated as if it originated the uncertainty and created the skepticism.

It may be contended, however, that all this does not justify the earlier statement that the limiting situation which occasions and cuts off judgment is not itself a value. Why, it will be asked, does a man buy a suit of clothes unless that is a value, or at least a proximate means to a further value? The answer is short and simple. Because he has to, because the

situation in which he lives demands it. The answer probably seems too summary. But it may suggest that while a man lives, he never is called upon to judge whether he shall act, but simply *how* he shall act. A decision not to act is a decision to act in a certain way, it is never a judgment not to act, unqualifiedly. It is a judgment to do something else—to wait, for example. A judgment that the best thing to do is to retire from active life, to become a Simon Stylites, is a judgment to act in a certain way, conditioned upon the necessity that, irrespective of judging, a man will have to act somehow anyway. A decision to commit suicide is not a decision to be dead, it is a decision to perform a certain act. The act may depend upon reaching the conclusion that life is not worth living. But as a judgment, this is a conclusion to act in a way to terminate the possibility of further situations requiring judgment and action. And it does not imply that a judgment about life as a supreme value and standard underlies all judgments as to how to live. More specifically, it is not a judgment upon the value of life *per se*, but a judgment that one does not find at hand the specific means of making life worth while. As an act to be done, it falls within and assumes life. As a judgment upon the value of life, by definition it evades the issue. No one ever influenced a person considering committing suicide by arguments concerning the value of life, but only by suggesting or supplying conditions

and means which make life worth living; in other words, by furnishing *direct* stimuli to living

However, I fear that all this argument may only obscure a point obvious without argument, namely, that all deliberation upon what to do is concerned with the completion and determination of a situation in some respect incomplete and so indeterminate. Every such situation is specific, it is not *merely* incomplete, the incompleteness is *of* a specific situation. Hence the situation sets limits to the reflective process, what is judged has reference to it and that which limits never is judged in the particular situation in which it is limiting. Now we have in ordinary speech a word which expresses the nature of the conditions which limit the judgments of value. It is the word "invaluable." The word does not mean something of supreme value as compared with other things any more than it means something of zero value. It means something out of the scope of valuation—something out of the range of judgment; whatever in the situation at hand is not and cannot be any part of the subject-matter of judgment and which yet instigates and cuts short the judgment. It means, in short, that judgment at some point runs against the brute act of holding something dear as its limit.

V

The statement that values are determined in the process of judgment of what to do (that is, in situa-

tions where preference depends upon reflection upon the conditions and possibilities of a situation requiring action) will be met by the objection that our practical deliberations usually assume precedent specific values and also a certain order or grade among them. There is a sense in which I am not concerned to deny this. Our deliberate choices go on in situations more or less like those in which we have previously chosen. When deliberation has reached a valuation, and action has confirmed or verified the conclusion, the result remains. Situations overlap. The m which is judged better than n in one situation is found worse than l in another, and so on, thus a certain order of precedence is established. And we have to broaden the field to cover the habitual order of reflective preferences in the community to which we belong. The valu-eds or valuables thus ~~constituted~~ present themselves as facts in subsequent situations. Moreover, by the same kind of operation, the dominating objects of past valuations present themselves as standardized values.

But we have to note that such value-standards are only presumptive. Their status depends, on one hand, upon the extent in which the present situation is like the past. In a progressive or rapidly altering social life, the presumption of identical present value is weakened. And while it would be foolish not to avail one's self of the assistance in present valuations of the valuables established in other situations,

we have to remember that habit operates to make us overlook differences and presume identity where it does not exist—to the misleading of judgment. On the other hand, the contributory worth of past determinations of value is dependent upon the extent in which *they* were critically made, especially upon the extent in which the consequences brought about through acting upon them have been carefully noted. In other words, the presumptive force of a past value in present judgment depends upon the pains taken with its verification.

In any case, so far as judgment takes place (instead of the reminiscence of a prior good operating as a direct stimulus to present action) all valuation is in some degree a revaluation. Nietzsche would probably not have made so much of a sensation, but he would have been within the limits of wisdom, if he had confined himself to the assertion that all judgment, in the degree in which it is critically intelligent, is a transvaluation of prior values. I cannot escape recognition that any allusion to modification or transformation of an object through judgment arouses partisan suspicion and hostility. To many it appears to be a survival of an idealistic epistemology. But I see only three alternatives. Either there are no practical judgments—as judgments they are wholly illusory, or the future is bound to be but a repetition of the past or a reproduction of something eternally existent in some transcendent realm (which is the same thing

logically),¹ or the object of a practical judgment is some change, some alteration, to be brought about in the given, the nature of the change depending upon the judgment and yet constituting its subject-matter. Unless the epistemological realist accepts one of the two first alternatives, he seems bound, in accepting the third, to admit not merely that practical judgments make a difference in things as an after-effect (this he seems ready enough to admit), but that the import and validity of judgments is a matter of the difference thus made. One may, of course, hold that this is just what marks the distinction of the practical judgment from the scientific judgment. But one who admits this fact as respects a practical judgment can no longer claim that it is fatal to the very idea of judgment to suppose that its proper object is some difference to be brought about in things, and that the truth of the judgment is constituted by the differences in consequences actually made. And a logical realist who takes seriously the

¹ Upholders of this view generally disguise the assumption of repetition by the notion that what is judged is progress in the direction of approximation to an eternal value. But as matter of fact, progress is never judged (as I have had repeated occasion to point out) by reference to a transcendent eternal value, but in reference to the success of the end-in-view in meeting the needs and conditions of the specific situation—a surrender of the doctrine in favor of the one set forth in the text. Logically, the notion of progress as approximation has no place. The thesis should read that we always try to repeat a given value, but always fail as a matter of fact. And constant failure is a queer name for progress.

notion that moral good is a fulfilment of an organization or integration must admit that any proposition about such an object is prospective (for it is something *to be* attained through action), and that the proposition is made for the sake of furthering the fulfilment. Let one start at this point and carry back the conception into a consideration of other kinds of propositions, and one will have, I think, the readiest means of apprehending the intent of the theory that all propositions are but the propoundings of possible knowledge, not knowledge itself. For unless one marks off the judgment of good from other judgment by means of an arbitrary division of the organism from the environment, or of the subjective from the objective, no ground for any sharp line of division in the propositional-continuum will appear.

But (to obviate misunderstanding) this does not mean that some psychic state or act makes the difference in things. In the first place, the subject-matter of the judgment is a change to be brought about, and, in the second place, this subject-matter does not become an *object* until the judgment has issued in act. It is the act which makes the difference, but nevertheless the act is but the complete object of judgment and the judgment is complete as a judgment only in the act. The anti-pragmatists have been asked (notably by Professor A. W. Moore) how they sharply distinguish between judgment—or knowledge—and

act and yet freely admit and insist that knowledge makes a difference in action and hence in existence. This is the crux of the whole matter. And it is a logical question. It is not a query (as it seems to have been considered) as to how the mental can influence a physical thing like action—a variant of the old question of how the mind affects the body. On the contrary, the implication is that the relation of knowledge to action becomes a problem of the action of a mental (or logical) entity upon a physical one only when the logical import of judgment has been misconceived. The positive contention is that the realm of logical propositions presents in a realm of *possibility* the specific rearrangement of things which overt action presents in actuality. Hence the passage of a proposition into action is not a miracle, but the realization of its own character—its own meaning as logical. I do not profess, of course, to have shown that such is the case for *all* propositions; that is a matter which I have not discussed. But in showing the tenability of the hypothesis that practical judgments are of that nature, I have at least ruled out any purely dialectic proof that the *nature* of knowledge as such forbids entertaining the hypothesis that the import—indirect if not direct—of all logical propositions is some difference to be brought about. The road is at least cleared for a more unprejudiced consideration of this hypothesis on its own merits.

SENSE PERCEPTION AS KNOWLEDGE

I mentioned incidentally in the first section that it is conceivable that failure to give adequate consideration to practical judgments may have a compromising effect upon the consideration of other types. I now intend to develop this remark with regard to sense perception as a form of knowledge. The topic is so bound up with a multitude of perplexing psychological and epistemological traditions that I have first to make it reasonably clear what it is and what it is not which I propose to discuss. I endeavored in an earlier series of papers¹ to point out that the question of the *material* of sense perception is not, as such, a problem of the theory of knowledge at all, but simply a problem of the occurrence of a certain material—a problem of causal conditions and consequences. That is to say, the problem presented by an image² of a bent stick, or by a dream, or by “secondary” sensory qualities is properly a problem of physics—of conditions of occurrence, and not of logic, of truth or falsity, fact or fiction. That the existence of a red *quale* is dependent upon disturbances of a certain velocity of a medium in connection with certain changes of the organism is not to be confused with the notion that red is a way of knowing, in some more or less adequate fashion, some more “real” object or else

¹ See IX and X *ante*

² I use the term “image” in the sense of optics, not of psychology

of knowing itself The fact of causation—or functional dependence—no more makes the *quale* an “appearance” to the mind of something more real than itself or of itself than it makes bubbles on the water a real fish transferred by some cognitive distortion into a region of appearance With a little stretching we may use the term appearance in either case, but the term only means that the red *quale* or the water-bubble is an *obvious* or conspicuous thing from which we infer something else not so obvious

This position thus freely resumed here needs to be adequately guarded on all sides It implies that the question of the existence or presence of the *subject-matter* of even a complex sense perception may be treated as a question of physics It also implies that the *existence* of a sense perception may be treated as a problem of physics But the position is not that *all* the problems of sense perception are thereby exhausted There is still, on the contrary, the problem of the cognitive status of sense perception So far from denying this fact, I mean rather to emphasize it in holding that this knowledge aspect is not to be identified—as it has been in both realistic and idealistic epistemologies—with the simple *occurrence* of presented subject-matter and with the *occurrence* of a perceptive act It is often stated, for example, that primitive sense objects when they are stripped of all inferential material cannot possibly be false—but with the implication that they, therefore, must

be true Well, I meant to go this statement one better—to state that they are neither true nor false—that is, that the distinction of true-or-false is as irrelevant and inapplicable as to any other existence, as it is, say, to being more than five feet high or having a low blood pressure This position when taken leaves over the question of sense perception as knowledge, as capable of truth or falsity It is this question, then, which I intend to discuss in this paper

I

My first point is that some sense perceptions at least (as matter of fact the great bulk of them), are without any doubt forms of practical judgment—or, more accurately, are terms in practical judgments as propositions of what to do When in walking down a street I see a sign on the lamp-post at the corner, I assuredly see a sign Now in ordinary context (I do not say always or necessarily) this is a sign of what to do—to continue walking or to turn The other term of the proposition may not be stated or it may be; it is probably more often tacit Of course, I have taken the case of the sign purposely But the case may be extended The lamp-post as perceived is to a lamp-lighter a sign of something else than a turn, but still a sign of something to be done To another man, it may be a sign of a possible support. I am anxious not to force the scope of cases of this

class beyond what would be accepted by an unbiased person, but I wish to point out that certain features of the perceived object, as a cognitive term, which do not seem at first sight to fall within this conception of the object, as, an intellectual sign of what to do, turn out upon analysis to be covered by it. It may be said, for example, that our supposed pedestrian perceives much besides that which serves as evidence of the thing to be done. He perceives the lamp-post, for example, and possibly the carbons of the arc. And these assuredly do not enter into the indication of what to do or how to do it.

The reply is threefold. In the first place, it is easy—and usual—to read back into the sense perception more than was actually in it. It is easy to *recall* the familiar features of the lamp-post, it is practically impossible—or at least very unusual—to recall what was actually perceived. So we read the former into the latter. The *tendency* is for actual perception to limit itself to the minimum which will serve as sign. But, in the second place, since it is never wholly so limited, since there is always a surplusage of perceived object, the fact stated in the objection is admitted. But it is precisely this surplusage which has not *cognitive* status. It does not serve as a sign, but neither is it *known*, or a term in knowledge. A child, walking by his father's side, with no aim and hence no reason for securing indications of what to do, will probably see more in his idle curiosity than his

parent He will have more presented material But this does not mean that he is making more propositions, but only that he is getting more material for possible propositions It means, in short, that he is in an aesthetic attitude of realization rather than in a cognitive attitude But even the most economical observer has some aesthetic, non-cognitive surplusage¹ In the third place, surplusage is necessary for the operation of the signifying function. Independently of the fact that surplusage may be required to render the sign specific, action is free (its variation is under control) in the degree in which *alternatives* are present The pedestrian has probably the two alternatives in mind to go straight on or to turn The perceived object might indicate to him another alternative—to stop and inquire of a passer-by And, as is obvious in a more complicated case, it is the extent of the perceived object which both multiplies alternative ways of acting and gives the grounds for selecting among them A physician, for example, deliberately avoids such hard-and-fast alternatives as have been postulated in our instance He does not observe simply to get an indication of whether the man is well or ill, but in order to determine what to do he extends his explorations over a

¹ That something of the cognitive, something of the sign or term function, enters in as a catalyzer, so to speak, in even the most aesthetic experiences, seems to be altogether probable, but that question it is not necessary to raise here

wide field. Much of his perceived object field is immaterial to what he finally does, that is, does not serve as sign. But it is all relevant to *judging* what he is to do. Sense perception as a term in practical judgment *must* include more than the element which finally serves as sign. If it did not, there would be no perception, but only a direct stimulus to action.¹

The conclusion that such perceptions as we have been considering are terms in an inference is to be carefully discriminated from the loose statement that sense perceptions are unconscious inferences. There is a great difference between saying that the perception of a shape affords an indication for an inference and saying that the perception of shape is itself an inference. That definite shapes would not be perceived, were it not for neural changes brought about in prior inferences, is a possibility, it may be, for aught I know, an ascertained fact. Such telescoping of a perceived object with the object inferred from it may be a constant function, but in any case the telescoping is not a matter of a present inference.

¹ The superstition that whatever influences the action of a conscious being must be an unconscious sensation or perception, if it is not a conscious one, should be summarily dismissed. We are active beings from the start and are naturally, wholly apart from consciousness, engaged in redirecting our action in response to changes in our surroundings. *Alternative* possibilities, and hence an indeterminate situation, change direct response into a response mediated by a perception as a sign of possibilities, that is, a physiological stimulus into a perceived quality—a sensory datum.

going on unconsciously, but is the result of an organic modification which has occurred in consequence of prior inferences. In similar fashion, to say that to see a table is to get an indication of something to write on is in no way to say that the perception of a table is an inference from sensory data. To say that certain earlier perceived objects not having as perceived the character of a table have now "fused" with the results of inferences drawn from them is not to say that the perception of the table is now an inference. Suppose we say that the first perception was of colored patches, that we inferred from this the possibility of reaching and touching, and that on performing these acts we secured certain qualities of hardness, smoothness, etc., and that these are now all fused with the color-patches. At most this only signifies that certain *previously* inferred qualities have now become consolidated with qualities from which they were formerly inferred. And such fusion or consolidation is precisely *not inference*. As matter of fact, such "fusion" of qualities, given and *formerly* inferred, is but a matter of speaking. What has really happened is that *brain* processes which formerly happened successively now happen simultaneously. What we are dealing with is not a fact of cognition, but a fact of the organic conditions of the occurrence of an act of perception.

Let us apply the results to the question of sense "illusions." The bent reed in the water comes

naturally to mind. Purely physical considerations account for the refraction of the light which produces an optical image of a bent stick. This has nothing to do with knowledge or with sense perception—with seeing. It is simply and wholly a matter of the properties of light and a lens. Such refractions are constantly produced without our noting them. In the past, however, light refracted and unrefracted has been a constant stimulus to responsive actions. It is a matter of the native constitution of the organism that light stimulates the eyes to follow and the arms to reach and the hands to clutch and handle. As a consequence, certain arrangements of reflected and refracted light have become a sign to perform certain specific acts of handling and touching. As a rule, stimuli and reactions occur in an approximately homogeneous medium—the air. The system of signs or indexes of action set up has been based upon this fact and accommodated to it. A habit or bias in favor of a certain kind of inference has been set up. We infer from a bent ray of light that the hand, in touching the reflecting object, will, at a certain point, have to change its direction. This habit is carried over to a medium in which the conclusion does not hold. Instead of saying that light is bent—which it is—we *infer* that the stick is bent. We infer that the hand could not protract a straight course in handling the object. But an expert fisherman never makes such an error in spearing fish.

Reacting in media of different refractive capacities, he bases his signs and inferences upon the conditions and results of his media. I see no difference between these cases and that of a man who can read his own tongue. He sees the word "pain" and infers it means a certain physical discomfort. As matter of fact, the thing perceived exists in an unfamiliar medium and signifies bread. To the one accustomed to the French language the right inference occurs.¹ There is neither error nor truth in the optical image. It just exists physically. But we take it for something else, we behave to it as if it were something else. We *mis*-take it.

II

So far as I can see, the pronounced tendency to regard the perceived object as itself the object of a peculiar kind of knowledge instead of as a term in knowledge of the practical kind has two causes. One is the confirmed habit of neglecting the wide scope and import of practical judgments. This leads to overlooking the responsive act as the other term indicated by the perception, and to taking the perceived object as the whole of the situation just by itself. The other cause is the fact that because perceived objects are constantly employed as evidence of what is to be done—or how to do something—they them-

¹ Compare Woodbridge, *Journal of Philosophy and Psychology*, X, 5

selves become the objects of prolonged and careful scrutiny. We pass naturally and inevitably from recognition to *observation*. Inference will usually take care of itself if the datum is properly determined. At the present day, a skilled physician will have little difficulty in inferring typhoid instead of malaria from certain symptoms provided he can make certain observations—that is, secure certain data from which to infer. The labor of intelligence is thus transferred from inference to the determination of data, the data being determined, however, in the interests of inference and as parts of an inference.

At this point, a significant complication enters in. The ordinary assumption in the discussion of the relation of perceived objects to knowledge is that “the” object—the real object—of knowledge in perception is the thing which *caused* the qualities which are given. It is assumed, that is, that the other term of a proposition in which a sense datum is one term must be the thing which produced it. Since this producing object does not for the most part appear in ordinary sense perception, we have on our hands perception as an epistemological problem—the relation of an appearance to some reality which it, somehow, conceals rather than indicates. Hence also the difficulties of “reconciling” scientific knowledge in physics where these causes are the terms of the propositions with “empirical” or sense perception knowledge where they do not even appear.

Here is where the primary advantage of recognizing that ordinary sense perceptions are forms of practical judgment comes in. In practical judgments, the other term is as open and aboveboard as is the sensory quality: it is the thing to be done, the response to be selected. To borrow an illustration of Professor Woodbridge's: A certain sound indicates to the mother that her baby needs attention. If she turns out to be in error, it is not because sound ought to mean so many vibrations of the air, and as matter of fact doesn't even suggest air vibrations, but because there is wrong inference as to the act to be performed.

I imagine that if error never occurred in inferences of this practical sort the human race would have gone on quite contented with them. However that may be, errors *do* occur and the endeavor to control inference as to consequences (so as to reduce their likelihood of error) leads to propositions where the knowledge-object of the perceived thing is not something to be done, but the cause which produced it. The mother finds her baby peacefully sleeping and says the baby didn't *make* the noise. She investigates and decides a swinging door *made* it. Instead of inferring a consequence, she infers a cause. If she had identified the noise in the first place, she would have concluded that the hinges needed oiling.

Now where does the argument stand? The proper control of inference in specific cases is found (a) to lie in the proper identification of the datum. If

the perception is of a certain kind, the inference takes place as a matter of course, or else inference can be suspended until more adequate data are found, and thus error is avoided even if truth be not found. Furthermore (*b*) it is discovered that the most effective way of identifying datum (and securing adequate data) is by inference to its cause. The mother stops short with the baby and the door as causes. But the same motives which made her transfer her inference from consequences to conditions are the motives which lead others to inferring from sounds to vibrations of air. Hence our scientific propositions about sensory data. They are not, as such, about things to do, but about things which have been done, have happened—"facts." But they have reference, nevertheless, to inferences regarding consequences to be effected. They are the means of securing data which will prevent errors which would otherwise occur, and which facilitate an entirely new crop of inferences as to possibilities—means and ends—of action. That scientific men should be conscious of this reference or even interested in it is not at all necessary, for I am talking about the logic of propositions, not about biography nor psychology. If I reverted to psychology, it would be to point out that there is no reason in the world why the practical activity of some men should not be predominantly directed into the pursuits connected with discovery. The extent in which they actually are so directed depends upon social conditions.

III

We are brought to a consideration of the notion of "primitive" sense data. It was long customary to treat the attempt to define true knowledge in terms derived from sense data as a confusion of psychology—or the history of the growth of knowledge—with logic, the theory of the character of knowledge as knowledge. As matter of fact, there *is* confusion, but in the opposite direction. The attempt involved a confusion of logic with psychology—that is, it treated a phase of the technique of inference as if it were a natural history of the growth of ideas and beliefs.

The chief source of error in ordinary inference is an unrecognized complexity of data. Perception which is not experimentally controlled fails to present sufficiently wide data to secure differentia of possible inferences, and it fails to present, even in what is given, lines of cleavage which are important for proper inference. This is only an elaborate way of saying what scientific inquiry has made clear, that, for purposes of inference as to conditions of production of what is present, *ordinary* sense perception is too narrow, too confused, too vivid as to some *qualies* and too blurred as to some others. Let us confine our attention for the moment to confusion. It has often been pointed out that sense qualities being just what they are, it is illegitimate to introduce such notions as obscurity or confusion into them. a slightly

illuminated color is just as irretrievably what it is, as clearly itself, as an object in the broad glare of noonday. But the case stands otherwise when the *quale* is taken as a datum for inference. It is not so easy to identify a perceived object *for purposes of inference* in the dusk as in bright light. From the standpoint of an inference to be effected, the confusion is the same as an unjustifiable simplification. This over-simplification has the effect of making the *quale*, as a term of inference, ambiguous. To infer from it is to subject ourselves to the danger of all fallacies of ambiguity which are expounded in the textbooks. The remedy is clearly the resolution, by experimental means, of what seems to be a simple datum into its "elements." This is a case of analysis, it differs from other modes of analysis only in the subject-matter upon which it is directed, viz, something which had been previously accepted as a simple whole. The result of this analysis is the existence as objects of perception of isolated qualities like the colors of the spectrum scientifically determined, the tones of the scale in all their varying intensities, etc., in short, the "sensations" or sense qualities of contemporary psychology textbooks or the "simple ideas" of sensation of Locke or the "objects of sense" of Russell. They are the material of sense perception discriminated for the purpose of better inferences.

Note that these simple data or elements are not original, psychologically or historically, they are

logical primitives—that is, irreducible for purposes of inference. They are simply the most unambiguous and best defined objects of perception which can be secured to serve as *signs*. They are experimentally determined, with great art, precisely because the naturally given, the customary, objects in perception have been ambiguous or confused terms in inference. Hence they are replaced, through experimental means involving the use of wide scientific knowledge deductively employed, by simpler sense objects. Stated in current phraseology, “sensations” (i.e., qualities present to sense) are not the elements out of which perceptions are composed, constituted, or constructed, they are the finest, most carefully discriminated objects of perception. We do not first perceive a single, thoroughly defined shade, a tint and hue of red, its perception is the last refinement of observation. Such things are the limits of perception, but they are final, not initial, limits. They are what is perceived to be given under the most favorable possible conditions, conditions, moreover, which do not present themselves accidentally, but which have to be intentionally and experimentally established, and detection of which exacts the use of a vast body of scientific propositions.

I hope it is now evident what was meant by saying that current logic presents us not with a confusion of psychology with logic, but with a wholesale mistaking of logical determinations for facts of psy-

chology. The confusion was begun by Locke—or rather made completely current through the enormous influence exercised by Locke—and some reference to Locke may be of aid in clearing up the point. Locke's conception of knowledge was logical, not psychological. He meant by knowledge thoroughly justified beliefs or propositions, "certainty," and carefully distinguished it from what passed current as knowledge at a given time. The latter he called "assent," opinion, belief, or judgment. Moreover, his interest in the latter was logical. He was after an art of controlling the proper degree of assent to be given in matters of probability. In short, his sole aim was to determine certainty where certainty is possible and to determine the due degree of probability in the much vaster range of cases where only probability is attainable. A natural history of the growth of "knowledge" in the sense of what happens to pass for knowledge was the last of his interests. But he was completely under the domination of the ruling idea of his time, namely, that *Nature* is the norm of truth. Now the earliest period of human life presents the "work of nature" in its pure and unadulterated form. The normal is the original, and the original is the normative. Nature is both beneficent and truthful in its work, it retains all the properties of the Supreme Being whose vice-regent it is. To get the logical ultimates we have only, therefore, to get back to the natural primitives. Under the influence

of such deistic ideas, Locke writes a mythology of the history of knowledge, starting from clear and distinct meanings, each simple, well defined, sharply and unambiguously just what it is on its face, without concealments and complications, and proceeds by "natural" compoundings up to the store of complex ideas, and to the perception of simple relations of agreement among ideas—a perception always certain if the ideas are simple, and always controllable in the case of complex ideas if we consider the simple ideas and their compoundings. Thus he established the habit of taking logical discriminations as historical or psychological primitives—as "sources" of beliefs and knowledge instead of as checks upon inference and as means of knowing.

I hope reference to Locke will not make a scapegoat. I should not have mentioned him if it were not that this way of looking at things found its way over into orthodox psychology and then back again into the foundations of logical theory. It may be said to be the stock in trade of the school of empiricist logicians, and (what is even more important) of the other schools of logic whenever they are dealing with propositions of perception and observation *vide* Russell's trusting confidence in "atomic" propositions as psychological primitives. It led to the supposition that there is a kind of *knowledge* or simple apprehension (or sense acquaintance) implying no inference and yet basic to inference. Note, if you

please, the multitude of problems generated by thinking of whatever is present in experience (as sensory qualities are present) as if it were intrinsically and apart from the use made of its subject-matter of knowledge

a) The mind-body problem becomes an integral part of the problem of knowledge. Sense organs, neurones, and neuronic connections are certainly involved in the occurrence of a sense quality. If the occurrence of the latter is in and of itself a mode of knowledge, it becomes a matter of utmost importance to determine just how the sense organs take part in it. If one is an idealist he responds with joy to any intimation that the "process of apprehension" (that is, speaking truly, the physical conditions of the occurrence of the sensory datum) transforms the extra organic stimulus—the alteration is testimony somehow to the constitutive nature of mind! But if he is a realist he conceives himself under obligation to show that the external stimulus is transmitted without any alteration and is apprehended just as it is, color must be shown to be simply, after all, a compacting of vibrations—or else the validity of knowledge is impugned! Recognize that knowledge is something *about* the color, whether about its conditions or causes or consequences or whatever and that we don't have to identify color itself with a mode of knowing, and the situation changes. We know a color when we understand, just as we know a

thunder-storm when we understand. More generally speaking, the relation of brain-change to consciousness is thought to be an essential part of the problem of knowledge. But if the brain is involved in knowing simply as part of the mechanism of acting, as the mechanism for co-ordinating partial and competing stimuli into a single scheme of response, as part of the mechanism of actual experimental inquiry, there is no miracle about the participation of the brain in knowing. One might as well make a problem of the fact that it takes a hammer to drive a nail and takes a hand to hold the hammer as to make a problem out of the fact that it also requires a physical structure to discover and to adapt the particular acts of holding and striking which are needed.

b) The propositions of physical science are not found among the data of apprehension. Mathematical propositions may be disposed of by making them purely a priori, propositions about sense objects by making them purely a posteriori.¹ But physical propositions, such as make up physics, chemistry, biology, to say nothing of propositions of history, anthropology, and society, are neither one nor the other. I cannot state the case better than Mr. Russell has stated it, although, I am bound to add, the stating did not arouse in Mr. Russell any suspicion of the premises with which he was operating. "Men of science, for the most part, are willing

¹ See Russell, *Scientific Method in Philosophy*, p. 53

to condemn immediate data as 'merely subjective,' while yet maintaining the truth of the physics inferred from those data. But such an attitude, though it may be *capable* of justification, obviously stands in need of it, and the only justification possible must be one which exhibits matter as a logical construction from sense data . . . It is therefore necessary to find some way of bridging the gulf between the world of physics and the world of sense."¹ I do not see how anyone familiar with the two-world schemes which have played such a part in the history of humanity can read this statement without depression. And if it occurred to one that the sole generating condition of *these* two worlds is the assumption that sense objects are modes of apprehension or knowledge (are so intrinsically and not in the use made of them), he might think it a small price to pay to inquire into the standing of this assumption. For it was precisely the fact that sense perception and physical science appeared historically (in the seventeenth century) as rival modes of knowing the same world which led to the conception of sense objects as "subjective"—since they were so different from the objects of science. Unless sense and science had both first been thought of as modes of knowing and then as modes of knowing the same things, there would not have been the slightest reason for regarding immediate data, as "merely subjective." They would have

¹ *Ibid*, p. 101

been natural phenomena, like any other. That they are phenomena which involve the interaction of an organism with other things is just an important discovery about them, as is also a discovery about starch in plants.

Physical science is the *knowledge* of the world by their means. It is a rival, not of them, but of the medley of prior dogmas, superstitions, and chance opinions about the world—a medley which grew up and flourished precisely because of absence of a will to explore and of a technique for detecting unambiguous data. That Mr. Russell, who is a professed realist, can do no better with the problem (once committed to the notion that sense objects are of themselves *objects* of knowledge) than to hold that although the world of physics is not a legitimate inference from sense data, it is a permissible logical construction from them—permissible in that it involves no logical inconsistencies—suggests that the pragmatic difference between idealist and realist—of this type—is not very great. From necessary ideal constructions to permissible logical constructions involves considerable difference in technique but no perceptible practical difference. And the point of this family likeness is that both views spring from regarding sense perception and science as ways of knowing the same objects, and hence as rivals until some scheme of conciliation has been devised.

c) It is but a variant of this problem to pass to what may be called either the ego-centric predica-

ment or the private-public problem. Sense data differ from individual to individual. If they are recognized to be natural events, this variation is no more significant than any change depending upon variation of generating conditions. One does not expect two lumps of wax at different distances from a hot body to be affected exactly alike, the upsetting thing would be if they were. Neither does one expect cast-iron to react exactly as does steel. That organisms, because of different positions or different internal structures, should introduce differences in the phenomena which they respectively have a share in producing is a fact of the same nature. But make the sense qualities thus produced not natural events (which may then be made either objects of inquiry or means of inquiry into something else) but modes of knowing, and every such deviation marks a departure from true knowing: it constitutes an anomaly. Taken *en masse* the deviations are so marked as to lead to the conclusion (even on the part of a realist like Mr. Russell) that they constitute a world of private existences, which, however, may be correlated without logical inconsistency with other such worlds. Not all realists are Leibnizian monadists as is Mr. Russell, I do not wish to leave the impression that all come to just this solution. But all who regard sense data as apprehensions have on their hands in some form the problem of the seemingly distorting action exercised by the

individual knower upon a public or common thing known or believed in

IV

I am not trying to discuss or solve these problems. On the contrary, I am trying to show that these problems exist only because of the identification of a datum determined with reference to control of inference with a self-sufficient knowledge-object. As against this assumption I point to the following facts. What is actually given as matter of empirical fact may be indefinitely complicated and diffused. As empirically existent, perceived objects never constitute the whole scope of the given, they have a context of indefinite extent in which they are set. To control inference it is necessary to analyze this complex situation—to determine what is data for inference and what is irrelevant. This analysis involves discriminative resolution into more ultimate simples. The resources of experimentation, all sorts of microscopic, telescopic, and registering apparatus, are called in to perform that analysis. As a result we differentiate not merely visual data from auditory—a discrimination effected by experiments within the reach of everybody—but a vast multitude of visual and auditory data. Physics and physiology and anatomy all play a part in the analysis. We even carry the analysis to the point of regarding, say, a color as a self-included object unreferred to any other object. We may avoid a false inference by conceiving it, not as a quality of any ob-

ject, but as merely a product of a nervous stimulation and reaction. Instead of referring it to a ribbon or piece of paper we may refer it to the organism. But this is only as a part of the technique of suspended inference. We avoid some habitual inference in order to make a more careful inference.

Thus we escape, by a straightening out of our logic (by avoiding erecting a system of logical distinctions and checks into a mythological natural history), the epistemological problems. We also avoid the contradiction which haunts every epistemological scheme so far propounded. As matter of fact every proposition regarding what is "given" to sensation or perception is dependent upon the assumption of a vast amount of scientific knowledge which is the result of a multitude of prior analyses, verifications, and inferences. What a combination of Tantalus and Sisyphus we get when we fancy that we have cleared the slate of all these material implications, fancy that we have really started with simple and independent givens, and then try to show how from these original givens we can arrive at the very knowledge which we have all the time employed in the discovery and fixation of the simple sense data!¹

SCIENCE AS A PRACTICAL ART

No one will deny that, as seen from one angle science is a pursuit, an enterprise—a mode of practice. It is at least that, no matter how much more

¹ See the essay on *The Existence of the World as a Logical Problem*

or else it is In course of the practice of knowing distinctive practical judgments will then naturally be made. Especially does this hold good when an intellectual class is developed, when there is a body of persons working at knowing as another body is working at farming or engineering. Moreover, the instrumentalities of this inquiring class gain in importance for all classes in the degree in which it is realized that success in the conduct of the practice of farming or engineering or medicine depends upon use of the successes achieved in the business of knowing The importance of the latter is thrown into relief from another angle if we consider the enterprises, like diplomacy, politics, and, to a considerable extent, morals, which do not acknowledge a thoroughgoing and constant dependence upon the practice of science As Hobbes was wont to say, the advantages of a science of morals are most obvious in the evils which we suffer from its lack

To say that something is to be learned, is to be found out, is to be ascertained or proved or believed, is to say that something is to be done. Every such proposition in the concrete is a practical proposition Every such proposition of inquiry, discovery and testing will have then the traits assigned to the class of practical propositions They imply an incomplete situation going forward to completion, and the proposition as a specific organ of carrying on the movement. I have not the intention of dwelling at length upon this

theme I wish to raise in as definite and emphatic a way as possible a certain question. Suppose that the propositions arising within the *practice* of knowing and functioning as agencies in its conduct could be shown to present all the distinctions and relations characteristic of the subject-matter of logic—what would be the conclusion? To an unbiased mind the question probably answers itself. All purely logical terms and propositions fall within the scope of the class of propositions of inquiry as a special form of propositions of practice. My further remarks are not aimed at *proving* that the case accords with the hypothesis propounded, but are intended to procure hospitality for the hypothesis.

If thinking is the art by which knowledge is practiced, then the materials with which thinking deals may be supposed, by analogy with the other arts, to take on in consequence special shapes. The man who is making a boat will give wood a form which it did not have, in order that it may serve the purposes to which it is to be put. Thinking may then be supposed to give its material the form which will make it amenable to its purpose—attaining knowledge, or, as it is ordinarily put, going from the unknown to the known. That physical analysis and synthesis are included in the processes of investigation of natural objects makes them a part of the practice of knowing. And it makes any general traits which result in consequence of such treatment

characters of *objects as they are involved in knowledge-getting* That is to say, if there are any features which natural existences assume in order that inference may be more fertile and more safe than it would otherwise be, those features correspond to the special traits which would be given to wood in process of constructing a boat They are manufactured, without being any worse because of it The question which I raised in the last paragraph may then be restated in this fashion. Are there such features? If there are, are they like those characters which books on logic talk about?

Comparison with language may help us Language—I confine myself for convenience to spoken language—consists of sounds But it does not consist simply of those sounds which issue from the human organs prior to the attempt to communicate It has been said that an American baby before talking makes almost every sound found in any language But elimination takes place And so does intensification Certain sounds originally slurred over are made prominent, the baby has to work for them and the work is one which he neither undertakes nor accomplishes except under the incitation of others Language is chiefly marked off, however, by articulation; by the arrangement of what is selected into an orderly sequence of vowels and consonants with certain rules of stress, etc It may fairly be said that speech is a manufactured article. it consists of

natural ebullitions of sound which have been shaped for the sake of being effective instrumentalities of a purpose. For the most part the making has gone on under the stress of the necessities of communication with little deliberate control. Works on phonetics, dictionaries, grammars, rhetorics, etc., mark some participation of deliberate intention in the process of manufacture. If we bring written language into the account, we should find the conscious factor extended somewhat. But making, shaping for an end, there is, whether with or without conscious control.

Now while there is something in the antecedent properties of sound which enters into the determination of speech, the *worth* of speech is in no way measured by faithfulness to these antecedent properties. It is measured only by its efficiency and economy in realizing the special results for which it is constructed. Written language need not look like sounds any more than sounds look like objects. It must *represent* articulate sounds, but *faithful* representation is wholly a matter of carrying the mind to the same outcome, of exercising the same function, not of resemblance or copying. Original structure *limits* what may be made out of anything; one cannot (at least at present) make a silk purse out of pigs' bristles. But this conditioning relationship is very different from one in which the antecedent existences are a model or prototype to which

the consequent must be servilely faithful The boat-maker must take account of the grain and strength of his wood To take account of, to reckon with, is a very different matter, however, from repetition or literal loyalty The measure is found in the consequences for which existences are used.

I wish, of course, to suggest that logical traits are just features of original existences as they have been worked over for use in inference, as the traits of manufactured articles are qualities of crude materials modified for specific purposes Upon the whole, past theories have vibrated between treating logical traits as "subjective," something resident in "mind" (mind being thought of as an immaterial or psychical existence independent of natural things and events), and ascribing ontological pre-existence to them. Thus far in the history of thought, each method has flourished awhile and then called out a reaction to its opposite The reification (I use the word here without prejudice) of logical traits has taken both an Idealistic form (because of emphasis upon their spiritual or ideal nature and stuff) and a Realistic one, due to emphasis upon their immediate apprehension and givenness That mathematics have been from Plato to Descartes and contemporary analytic realism the great provocative of Realistic Idealisms is a familiar fact The hypothesis here propounded is a *via media* What has been overlooked is the reality and importance of art and its works The tools and

works of art are neither mental, subjective things, nor are they antecedent entities like crude or raw material. They are the latter shaped for a purpose. It is impossible to overstate their objectivity from the standpoint of their existence and their efficacy within the operations in question; nor their objectivity in the sense of their dependence upon prior natural existences whose traits have to be taken account of, or reckoned with, by the operations of art. In the case of the art of inference, the art securely of going from the given to the absent, the dependence of mind upon inference, the fact that wherever inference occurs we have a conscious agent—one who recognizes, plans, invents, seeks out, deliberates, anticipates, and who, reacting to anticipations, fears, hates, desires, etc.—explains the theories which, because of misconception of the nature of mind and consciousness, have labeled logical distinctions psychical and subjective. In short, the theory shows why logical features have been made into ontological entities and into mental states.

To elaborate this thesis would be to repeat what has been said in all the essays of this volume. I wish only to call attention to certain considerations which may focus other discussions upon this hypothesis.

1 The existence of inference is a fact, a fact as certain and unquestioned as the existence of eyes or ears or the growth of plants, or the circulation of the

blood One observes it taking place everywhere where human beings exist A student of the history of man finds that history is composed of beliefs, institutions, and customs which are inexplicable without acts of inference This fact of inference is as much a datum—a hard fact—for logical theory as any sensory quality whatsoever It is something men do as they walk, chew, or jump There is nothing *a priori* or ideological about it It is just a brute empirically observable event

2 Its importance is almost as conspicuous as its existence Every act of human life, not springing from instinct or mechanical habit, contains it, most habits are dependent upon some amount of it for their formation, as they are dependent upon it for their readaptation to novel circumstances From the humblest act of daily life to the most intricate calculations of science and the determination and execution of social, legal, and political policies, things are used as signs, indications, or evidence from which one proceeds to something else not yet directly given.

3 The act of inferring takes place naturally, i.e., without intention It is at first something we do, not something which we *mean* to do. We do it as we breathe or walk or gesture. Only after it is done do we notice it and reflect upon it—and the great mass of men no more reflect upon it after its occurrence than they reflect upon the process of walking and try to discover its conditions and mechanism

That an individual, an animal organism, a man or a woman performs the acts is to say something capable of direct proof through appeal to observation, to say that something called mind, or consciousness does it is itself to employ inference and dubious inference. The fact of inference is much surer, in other words, than that of a particular inference, such as that to something called reason or consciousness, in connection with it, save as mind is but another word for the fact of inference, in which case of course it cannot be referred to as its cause, source, or author. Moreover, by all principles of science, inference cannot be referred to mind or consciousness as its condition, unless there is *independent* proof of the existence of that mind to which it is referred. Prima facie we are conscious or aware of inference precisely as we are of anything else, not by introspection of something within the very consciousness which is supposed to be its source, but by observation of something taking place in the world—as we are conscious of walking *after* we have walked. After it has been done naturally—or “unconsciously”—it may be done “consciously,” that is, with intent or on purpose. But this means that it is done *with* consciousness (whatever consciousness may be discovered to mean), not that it is done *by* consciousness. Now if other natural events characteristic only (so far as can be ascertained) of highly organized beings are marked by unique or by distinctive traits, there is good ground

for the assumption that inference will be so marked. As we do not find the circulation of blood or the stimulation of nerves in a stone, and as we expect as a matter of course to find peculiar conditions, qualities, and consequences in the being where such operations occur, so we do not find the act of inference in a stone, and we expect peculiar conditions, qualities, and consequences in whatever beings perform the act. Unless, in other words, all the ordinary canons of inquiry are suspended, inference is not an isolated nor a merely formal event. As against the latter, it has its own distinctive structure and properties, as against the former, it has specific generating conditions and specific results.

4 Possibly all this seems too obvious for mention. But there is often a virtual conspiracy in philosophy, not to mention obvious things nor to dwell upon them; otherwise remote speculations might be brought to a sudden halt. The point of these commonplaces resides in the push they may give anyone to engage in a search for *distinctive features in the act of inference*. The search may perhaps be best initiated by noting the seeming inconsistency between what has been said about inference as an art and inference as a natural, unpremeditated occurrence. The obvious function of spontaneous inference is to bring before an agent absent considerations to which he may respond as he otherwise responds to the stimulating force of the given situation. To infer rain is

to enable one to behave *now* as given conditions would not otherwise enable him to conduct himself. This instigation to behave toward the remote in space or time is the primary trait of the inferential act; descriptively speaking, the act consists in taking up an attitude of response to an absent thing as if it were present. But just because the thing is absent, the attitude taken may be either irrelevant and positively harmful or extremely pertinent and advantageous. We may infer rain when rain is not going to happen, and acting upon the inference be worse off than if there had been no inference. Or we may make preparations, which we would not otherwise have made, the rain may come, and the inference save our lives—as the ark saved Noah. Inference brings, in short, truth and falsity into the world, just as definitely as the circulation of the blood brings its distinctive consequences, both advantages and liabilities into the world, or as the existence of banking brings with it consequences of business extension and of bankruptcy not previously existent. If the reader objects to the introduction of the terms “truth” and “falsity”, I am perfectly willing to leave the choice of words to him, provided the fact is recognized that through inference men are capable of a kind of success and exposed to a kind of failure not otherwise possible dependent upon the fact that inference takes absent things as being in a certain real continuum with present things, so that our attitude toward the latter

is bound up with our reaction to the former as parts of the same situation. And in any event, I wish to protest against a possible objection to the introduction of the terms "false" and "true" It may be said that inference is not responsible for the occurrence of errors and truths, because these accompany simple apprehensions where there is no inference: as when I see a snake which isn't there—or any other case which may appear to the objector to afford an illustration of his point The objection illustrates my point To affirm a snake is to affirm potentialities going beyond what is actually given; it says that what is given is *going* to do something—the doing characteristic of a snake, so that we are to react to the given as to a snake Or if we take the case of a face in the cloud recognized as a phantasy, then (to say nothing of "in the cloud" which involves reference beyond the given) "phantasy," "dream," equally means a reference to objects and considerations *not* given as the actual datum is given

We have not got very far with our question of distinctive, unique traits called into existence by inference, but we have got far enough to have light upon what is called the "transcendence" of knowledge All inference is a *going beyond* the assuredly present to an absent Hence it is a more or less precarious journey It is transcending limits of security of immediate response The stone which reacts only to stimuli of the present, not of the future, cannot

make the mistakes which a being reacting to a future taken to be connected with the present is sure to make. But it is important to note just what this transcendence consists in. It has nothing to do with transcending mental states to arrive at an external object. *It is behaving to the given situation as involving something not given.* It is Robinson Crusoe going from a seen foot to an unseen man, not from a mental state to something unmental.

5 The mistakes and failures resulting from inference constitute the ground for transition from natural spontaneous performance to a technique or deliberate art of inference. There is something humorous about the discussion of the problem of error as if it were a rare or exceptional thing—an anomaly—when the barest glance at human history shows that mistakes have been the rule, and that truth lies at the bottom of a well. As to inferences bound up with barely keeping alive, man has had to effect a considerable balance of good guesses over bad. Aside from this somewhat narrow field, the original appearance of inference upon the scene probably added to the interest of life rather than to its efficiency. If the classic definition of man as a rational animal means simply an inferring or guessing animal, it applies to the natural man, for it allows for the guesses being mostly wrong. If it is used with its customary eulogistic connotations, it applies only to man chastened to the use of a hardly won and toilsome art.

If it alleges that man has any natural preference for a reasonable inference or that the rationality of an inference is a measure of its hold upon him, it is grotesquely wrong. To propagate this error is to encourage man in his most baleful illusion, and to postpone the day of an effective and widespread adoption of a perfected art of knowing.

Summarily put, the waste and loss consequent upon the natural happening of inference led man, slowly and grudgingly, to the adoption of safeguards in its performance. In some part, the scope of which is easily exaggerated, man has come to attribute many of the ills from which he suffers to his own premature, inept, and unguarded performing of inference, instead of to fate, bad luck, and accident. In some things, and to some extent in all things, he has invented and perfected an art of inquiry—a system of checks and tests to be used before the conclusion of inference is categorically affirmed. Its nature has been considered in many other places in these pages, but it may prove instructive to restate it in this context.

a) Nothing is less adapted to a successful accomplishing of an inference than the subject-matter from which it ordinarily fares forth. That subject-matter is a nest of obscurities and ambiguities. The ordinary warnings against trusting to imagination, the bad name which has come intellectually to attach to fancy, are evidences that anything may suggest any-

thing. Regarding most of the important happenings in life no inference has been too extravagant to obtain followers and influence action, because subject-matter was so variegated and complex that any objects which it suggested had a *prima facie* plausibility. That every advance in knowledge has been effected by using agencies which break up a complex subject-matter into independent variables (from each of which a distinct inference may be drawn), and by attacking each one of these things by every conceivable tool for further resolution so as to make sure we are dealing with something so simple as to be unambiguous, is the report of the history of science. It is sometimes held that knowledge comes ultimately to a necessity of belief, or acceptance, which is the equivalent of an incapacity to think otherwise than so and so. Well, even in the case of such an apparently simple "self-evident" thing as a red, this inability, if it is worth anything, is a residuum from experimental analysis. We do not believe in the thing as red (whenever there is a need of scientific testing) till we have exhausted all kinds of active attack and find the red still resisting and persisting. Ordinarily we move the head, we shade the eyes, we turn the thing over, we take it to a different light. The use of lens, prism, or whatever device, is simply carrying farther the use of like methods as of physical resolution. Whatever endures all these active (not mental) attacks, we accept—

pending invention of more effective weapons. To make sure that a given fact *is* just and such a shade of red is, one may say, a final triumph of scientific method. To turn around and treat it as something naturally or psychologically given is a monstrous superstition.

When assured, such a simple datum is for the sake of guarding the act of inference. Color may mean a lot of things, any red may mean a lot of things, such things are ambiguous, they afford unreliable evidence or signs. To get the color down to the last touch of possible discrimination is to limit its range of testimony, ideally, it is to secure a voice which says but one thing and says that unmistakably. Its simplicity is not identical with isolation, but with *specified* relationship. Thus the hard "facts," the brute data, the simple qualities or ideas, the sense elements of traditional and of contemporary logic, get placed and identified within the art of controlling inference. The allied terms "self-evident," "sensory truths," "simple apprehensions" have their meanings unambiguously determined in this same context, while apart from it they are the source of all kinds of error. They are no longer notions to conjure with. They express the last results attainable by present physical methods of discriminative analysis employed in the search for dependable data for inference. Improve the physical means of experimentation, improve the microscope or the

registering apparatus or the chemical reagent, and they may be replaced tomorrow by new, simple apprehensions of simple and ultimate data

b) Natural or spontaneous inference depends very largely upon the habits of the individual in whom inferring takes place. These habits depend in turn very largely upon the customs of the social group in which he has been brought up. An eclipse suggests very different things according to the rites, ceremonies, legends, traditions, etc., of the group to which the spectator belongs. The average layman in a civilized group may have no more personal science than an Australian Bushman, but the legends which determine his reactions are different. His inference is better, neither because of superior intellectual capacity, nor because of more careful personal methods of knowing, but because his instruction has been superior. The instruction of a scientific inquirer in the best scientific knowledge of his day is just as much a part of the control (or art) of inference as is the technique of observational analysis which he uses. As the bulk of prior ascertainments increases, the tendency is to identify this stock of learning, this store of achieved truth, with knowledge. There is no objection to this identification save as it leads the logician or epistemologist to ignore that which *made* it "knowledge" (that which gives it a right to the title), and as a consequence to fall into two errors: one, overlooking its function in the guidance and handling of

future inferences, the other, confusing the mere act of reference to what is known (known so far as it has accrued from prior tested inquiries) with knowing. To remind myself of what is known as to the topic with which I am dealing is an indispensable performance, but to call this reminder "knowing" (as the presentative realist usually does) is to confuse a psychological event with a logical achievement. It is from misconception of this act of reminding one's self of what is known, as a check in some actual inquiry, that arise most of the fallacies about simple acquaintance, mere apprehension, etc.—the fallacies which eliminate inquiry and inferring from knowledge.

c) The art of inference gives rise to specific features characterizing the *inferred* thing. The natural man reacts to the suggested thing as he would to something present. That is, he tends to accept it uncritically. The man called up by the footprint on the sand is just as real a man as the footprint is a real footprint. It is a *man*, not the idea of a man, which is indicated. What a thing means is another *thing*, it doesn't mean a meaning. The only difference is that the thing indicated is farther off, or more concealed, and hence (probably) more mysterious, more powerful and awesome, on that account. The man indicated to Crusoe by the footprints was like a man of menacing powers seen at a distance through a telescope. Things naturally inferred are accepted, in other words, by the natural man on altogether too

realistic a basis for adequate control, they impose themselves too directly and irretrievably. There are no alternatives save either acceptance or rejection *in toto*. What is needed for control is some device by which they can be treated for just what they are, namely, *inferred* objects which, however assured as objects of *prior* experiences, are uncertain as to their existence in connection with the object from which present inference sets out. While more careful inspection of the given object—to see if it be really a footprint, how fresh, etc—may do much for safe-guarding inference, and while forays into whatever else is known may help, there is still need for something else. We need some method of freely examining and handling the object in its status as an inferred object. This means some way of detaching it, as it were, from the particular act of inference in which it presents itself. Without some such detachment, Crusoe can never get into a free and effective relation with the man indicated by the footprint. He can only, so to speak, go on repeating, with continuously increasing fright, "There's a man about, there's a man about." The "man" needs to be treated, not as man, but as something having a merely *inferred* and hence potential status, as a meaning or thought, or "idea." There is a great difference between meaning and *a* meaning. Meaning is simply a function of the situation: this thing means that thing. meaning is this relationship. A meaning is something quite different, it

is not a function, but a specific entity, a peculiar thing, namely the man *as* suggested

Words are the great instrument of translating a relation of inference existing between two things into a new kind of thing which can be operated with on its own account, the term of discourse or reflection is the solution of the requirement for greater flexibility and liberation. Let me repeat. Crusoe's inquiry can play freely around and about the man inferred from the footprint only as he can, so to say, get away from the immediate suggestive force of the footprint. As it originally stands, the man suggested is on the same coercive level as the suggestive footprint. They are related, tied together. But a gesture, a sound, may be used as a *substitute* for the thing inferred. It exists independently of the footprint and may therefore be thought about and ideally experimented with irrespective of the footprint. It at once preserves the meaning-force of the situation and detaches it from the immediacy of the situation. It is *a* meaning, an idea.

Here we have, I submit, the explanation of notions, forms, essences, terms, subsistences, ideas, meanings, etc. They are surrogates of the objects of inference of such a character that they may be elaborated and manipulated exactly as primary things may be, so far as inference is concerned. They can be brought into relation with one another, quite irrespective of the things which originally suggested them. Without

such free play reflective inquiry is mockery, and control of inference an impossibility. When a speck of light suggests to the astronomer a comet, he would have nothing to do but either to accept the inferred object as a real one, or to reject it as a mere fancy unless he could treat "comet" for the time being not as a thing at all, but as a meaning, a conception, a meaning having, moreover, by connection with other meanings, implications—meanings consequent from it. Unless a meaning is an inferred object, detached and fixed as a term capable of independent development, what sort of a ghostly Being is it? Except on the basis stated, what is the transition from the function of meaning to *a* meaning as an entity in reasoning? And, once more, unless there is such a transition, is reasoning possible?

Cats have claws and teeth and fur. They do not have implications. No physical thing has implications. The *term* "cat" has implications. How can this difference be explained? On the ground that we cannot use the "cat" object inferred from given indications in such a way as will test the inference and make it fruitful, helpful, unless we can detach it from its existential dependence upon the particular things which suggest it. We need to know what a cat would be *if* it were there, what other things would also be indicated if the cat is really indicated. We therefore create a *new* object: we take something to stand for the cat-in-its-status-as-inferred in

contrast with the cat as a live thing. A sound or a visible mark is the ordinary mechanism for producing such a new object. Whatever the physical means employed, we now have a new object; a term, a meaning, a notion, an essence, a form or species, according to the terminology which may be in vogue. It is as much a specific existence as any sound or mark is. But it is a mark which notes, concentrates, and records an outcome of an inference which is not yet accepted and affirmed. That is to say, it designates an object which is *not yet* to be reacted to as one reacts to the given stimulus, but which is an object of further examination and inquiry, a medium of a postponed conclusion and of investigation continued till better grounds for affirming an object (making a definite, unified response) are given. *A term is an object so far as that object is undergoing shaping in a directed act of inquiry.* It may be called a possible object or a hypothetical object. Such objects do not walk or bite or scratch, but they are nevertheless actually present as the vital agencies of reflection. If we but forget where they live and operate—within the event of controlled inference—we have on our hands all the mysteries of the double world of existence and essence, particular and universal, thing and idea, ordinary life and science. For the world of science, especially of mathematical science, is the world of considerations which have approved themselves to be effectively regulative of the operations of

inference It is easier to wash with ordinary water than with H_2O , and there is a marked difference between falling off a building and $\frac{1}{2}gt^2$ But H_2O and $\frac{1}{2}gt^2$ are as potent for the distinctive act of inference—as genuine and distinctive an act as washing the hands or rolling down hill—as ordinary water and falling are impotent

Scientific men can handle these things-of-inference precisely as the blacksmith handles his tools They are not thoughts as they are ordinarily used, not even in the logical sense of thought They are rather things whose manipulation (as the blacksmith manipulates his tools) yield knowledge—or methods of knowledge—with a minimum of recourse to thinking and a maximum of efficiency When one considers the importance of the enterprise of knowledge, it is not surprising that appropriate tools have been devised for carrying it on, and that these tools have no prototypes in pre-existent materials They are real objects, but they are just the real objects which they are and not some other objects

THEORY AND PRACTICE

Our last paragraphs have touched upon the nature of science They contain, by way of intimation, an explanation of the distance which lies between the things of daily intercourse and the terms of science Controlled inference is science, and science is, accordingly, a highly specialized industry It is such a

specialized mode of practice that it does not appear to be a mode of practice at all. This high specialization is part of the reason for the current antithesis of theory and practice, knowledge and conduct, the other part being the survival of the ancient conception of knowledge as intuitive and dialectical—the conception which is set forth in the Aristotelian logic.

Starting from the hypothesis that the art of controlled inference requires for its efficient exercise specially adapted entities, it follows that the various sciences are the various forms which the industry of controlled inquiry assumes. It follows that the conceptions and formulations of the sciences—physical and mathematical—concern things which have been reshaped in view of the exigencies of regulated and fertile inference. To get things into the estate where such inference is practicable, many qualities of the water and air, cats and dogs, stones and stars, of daily intercourse with the world have been dropped or depressed. Much that was trivial or remote has been elevated and exaggerated. Neither the omissions nor the accentuations are arbitrary. They are purposeful. They represent the changes in the things of ordinary life which are needed to safeguard the important business of inference.

There is then a great difference between the entities of science and the things of daily life. This may be fully acknowledged. But unless the admis-

sion is accompanied by an ignoring of the function of inference, it creates no problem of conciliation, no need of apologizing for either one or the other. It generates no problem of the real and the apparent. The "real" or "true" objects of science are those which best fulfil the demands of secure and fertile inference. To arrive at them is such a difficult operation, there are so many specious candidates clamoring for the office, that it is no wonder that when the objects suitable for inference are constituted, they tend to impose themselves as *the* real objects, in comparison with which the things of ordinary life are but impressions made upon us (according to much modern thought), or defective samples of Being—according to much of ancient thought. But one has only to note that their genuinely characteristic feature is fitness for the aims of inference to awaken from the nightmare of all such problems. They differ from the things of the common world of action and association as the means and ends of one occupation differ from those of another. The difference is not that which exists between reality and appearance, but is that between the subject-matter of crude occupations and of a highly specialized and difficult art upon the success of which (so it is discovered) the progress of other occupations ultimately depends.

The entities of science are not only *from* the scientist, they are also *for* him. They express, that is, not only the outcome of reflective inquiries, but

express them in the particular form in which they can enter most directly and efficiently into subsequent inquiries. The fact that they are sustained within the universe of inquiry accounts for their remoteness from the things of daily life, the latter being promptly precipitated out of suspense in such solutions. That most of the immediate qualities of things (including the so-called secondary qualities) are dropped signifies that such qualities have not turned out to be fruitful for inference. That mathematical, mechanical, and "primary" distinctions and relations have come to constitute the proper subject-matter of science signifies that they represent such qualities of original things as are most manipular for knowledge-getting or assured and extensive inference. Consider what a hard time the scientific man had in getting away from other qualities, and how the more immediate qualities have been pressed upon him from all quarters, and it is not surprising that he inclines to think of the intellectually useful properties as alone "real" and to relegate all others to a quasi-illusory field. But his victory is now sufficiently achieved so that this tension may well relax, it may be acknowledged that the difference between scientific entities and ordinary things is one of function, the former being selected and arranged for the successful conduct of inferential knowings.

I conclude with an attempt to show how bootless the ordinary antithesis between knowledge (or theory)

and practice becomes when we recognize that it really involves only a contrast between the kinds of judgments appropriate to ordinary modes of practice and those appropriate to the specialized industry of knowledge-getting.

It is not true that to insist that scientific propositions fall within the domain of practice is to depreciate them. On its face, the insistence means simply that all knowledge involves experimentation, with whatever appliances are suited to the problem in hand, of an active and physical type. Instead of this doctrine leading to a low estimate of knowledge, the contrary is the case. This art of experimental thinking turns out to give the key to the control and development of other modes of practice. I have touched elsewhere in these essays upon the way in which knowledge is the instrument of regulation of our human undertakings, and I have also pointed out that intrinsic increments of meaning accrue in consequence of thinking. I wish here to point how that mode of practice which is called theorizing emancipates experience—how it makes for steady progress. No matter how much specialized skill improves, we are restricted in the degree in which our ends remain constant or fixed. Significant progress, progress which is more than technical, depends upon ability to foresee new and different results and to arrange conditions for their effectuation. Science is the instrument of increasing our technique in

attaining results already known and cherished More important yet, it is the method of emancipating us from enslavement to customary ends, the ends established in the past

Let me borrow from political philosophy a kind of caricature of the facts As social philosophers used to say that the state came into existence when individuals agreed to surrender some of their native personal rights for the sake of getting the advantages of non-interference and aid from others who made a like surrender, so we might say that science began when men gave up the claim to form the structure of knowledge each from himself as a center and measure of meaning—when there was an agreement to take an impersonal standpoint Non-scientific modes of practice, left to their natural growth, represent, in other words, arrangements of objects which cluster about the self, and which are closely tied down to the habits of the self Science or theory means a system of objects detached from any particular personal standpoint, and therefore available for any and every possible personal standpoint Even the exigencies of ordinary social life require a slight amount of such detachment or abstraction I must neglect my own peculiar ends enough to take some account of my neighbor if I am going to be intelligible to him I must at least find common ground Science systematizes and indefinitely extends this principle It takes its stand, not with what is

common with some particular neighbor living at this especial date in this particular village, but with any possible neighbor in the wide stretches of time and space. And it does so by the mere fact that it is continually reshaping its peculiar objects with an eye single to availability in inference. The more abstract, the more impersonal, the more impartially objective are *its* objects, the greater the variety and scope of inference made possible. Every street of experience which is laid out by science has its tracks for transportation, and every line issues transfer checks to every other line. You and I may keep running in certain particular ruts, but conditions are provided for somebody else to foresee—or infer—new combinations and new results. The depersonalizing of the things of everyday practice becomes the chief agency of their repersonalizing in new and more fruitful modes of practice. The paradox of theory and practice is that theory is with respect to all other modes of practice the most practical of all things, and the more impartial and impersonal it is, the more truly practical it is. And this is the sole paradox.

But lest the man of science, the man of dominantly reflective habits, be puffed up with his own conceits, he must bear in mind that practical application—that is, experiment—is a condition of his own calling, that it is indispensable to the institution of knowledge or truth. Consequently, in order that he keep his

own balance, it is needed that his findings be everywhere applied. The more their application is confined within his own special calling, the less meaning do the conceptions possess, and the more exposed they are to error. The widest possible range of application is the means of the deepest verification. As long as the specialist hugs his own results they are vague in meaning and unsafe in content. That individuals in every branch of human endeavor should be experimentalists engaged in testing the findings of the theorist is the sole final guaranty for the sanity of the theorist.

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