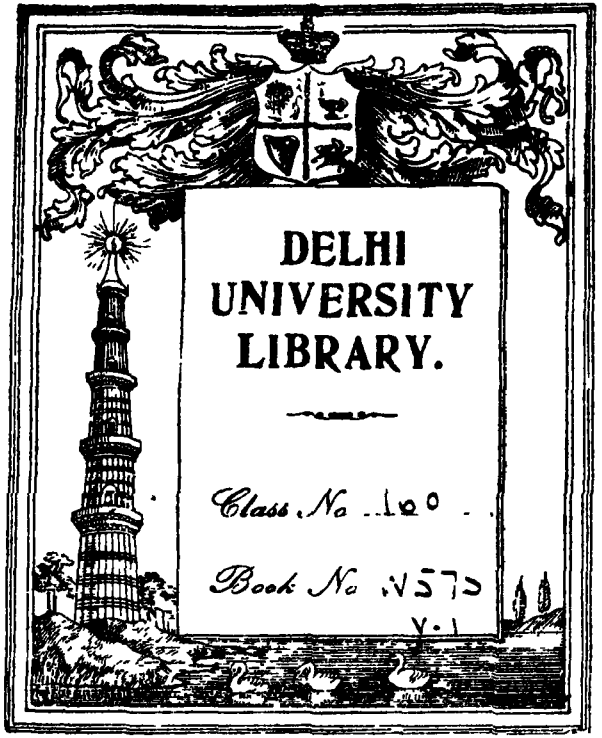

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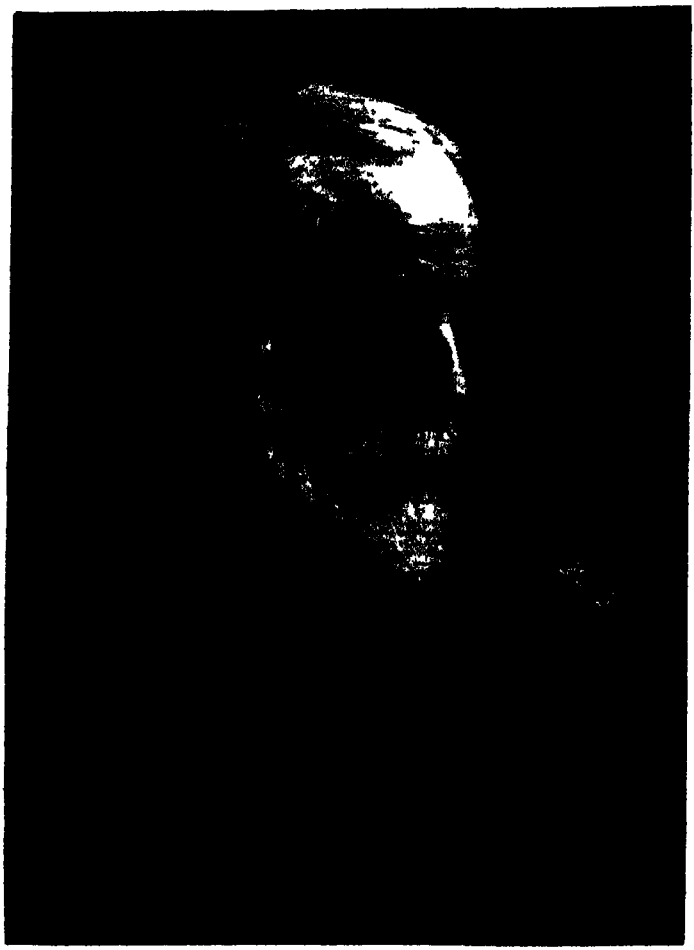
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STATEMENT AND INFERENCE

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Yours truly
J Cook Wilson

STATEMENT AND INFERENCE

WITH OTHER PHILOSOPHICAL PAPERS

BY

JOHN COOK WILSON
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EDITED FROM THE MSS., &c.

BY

A. S. L. FARQUHARSON
FELLOW OF UNIVERSITY COLLEGE

WITH A PORTRAIT, MEMOIR, AND SELECTED CORRESPONDENCE

IN TWO VOLUMES

VOL. I

OXFORD
AT THE CLARENDON PRESS
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Printer to the University

TO

MY MOTHER AND MY FATHER'S MEMORY

'From the memory and good name of my father, honour and manliness. From my mother, to serve God and give to man, to shun not every evil deed only but every evil thought. Simplicity of heart and home, and to keep far from the path of riches.'

M. AURELIUS ANTONINUS.

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TO THE READER

THESE volumes embrace what seemed most valuable and best suited to publication of the late Professor John Cook Wilson's philosophical lectures and speculations. His reputation for Greek scholarship stood so high with his contemporaries that a strong desire was expressed that his best work in this field also should be collected under one view. Expense and the inchoate condition of his unpublished critical studies have prevented this. Two important sets of lectures were accessible in pupils' note-books and were put generously at my service. To fit them however for the learned public would have demanded laborious recasting, while the student has easy access to invaluable work in English on both these topics, Plato's *Republic* and Aristotle's *Theory of Demonstrative Science.*

His collections upon the Greek *Scriptores Musici* and *Tactici* and his careful studies in Plato's later dialogues only Wilson himself could have arranged.

It seemed therefore best simply to make a list of his published works, with a note of the places where they are to be found and an indication of their nature. This I have done

His logic lectures, on the other hand, could be presented in a form which does not indeed do justice to his powers but will, it is hoped, be of assistance to the philosophical student. Moreover, he had himself clearly contemplated their publication. They are supplemented by two special courses, by selected passages from his memoranda—especially a paper which he was preparing to read to the British Academy—and by his philosophic correspondence. The latter has, it will be

seen, the *imprimatur* of no less an authority than Bernard Bosanquet.[1]

The sources of this work I have indicated in a Postscript, where I have also set out the approximate dates of the several constituent parts. This will explain and perhaps justify inequalities and inconsistencies of expression and even, at times, of doctrine. These could hardly be removed without serious danger of misrepresentation. Some recompense will be found in the light thrown on the path which led Wilson to his goal. I desire here to thank those gentlemen who so freely put their lecture notes at my disposal. In the end I had an *embarras de choix.*

My little Memoir is written deliberately from the point of view of a single observer. To correct its deficiencies or partiality I have added a selection from Wilson's familiar letters. These are meant to give ' some idea of what was in the man's mind in its original unmitigated form, without apology or attempt to soften it down '.[2] I might add ' what was in his heart ' also. The series covers, so far as was possible, his life from childhood to age. I have had no thought by my choice to idealize the writer or to disguise his amiable weaknesses. Wherever I could I have given the letters entire. Part of Boswell's secret lies in the scrupulous setting-down even of the trivial and commonplace. In these things we want a man, not a hero or a lay figure. My only omissions have been made to avoid giving pain to relatives or to living writers. I have left out some characteristically intemperate outbursts provoked by differences of opinion on philosophic themes, not because I desire to represent a passionless sage but because they would not be understood. Otherwise the

[1] Part V, x, xiv, esp. p. 826.
[2] R. L. Nettleship of his own account of Plato.

letters are nearly exactly as they were written, punctuation, spelling and all. The more scientific letters are in Part V; their length and the care given to their composition display very successfully the immense time and ardour Wilson lavished in his friends' assistance and in the attempt to win converts to his way of thinking. To illustrate his singular generosity in this regard I have been old-fashioned enough to include a selection of *Testimonia*.

The work has cost me most of my leisure hours in the past four years. That the result is very imperfect I do not need to be told, but I was anxious not to delay the book too long. For obvious reasons and others which do not concern the public I could not get to work until the Easter of 1921. It will be recalled that Green's Remains took a long time preparing and other examples will readily occur. Yet Nettleship found Green's works either already printed or in their manuscript form 'in general, continuous and coherent'. This was not my good fortune. Wilson left a great mass of material. He himself called his handwriting 'impressionist'. Thus the mere ocular labour of reading the manuscripts through has been most exacting. Moreover some parts, and those important, were in great disorder, and age increased his inveterate tendency to discursiveness and prolixity. In editing an intricate and abstract discussion it is very hard, I have found, to be always certain where one's author is repeating himself and where he is merely making one more parallel in his laborious advance. To omit or to rearrange may involve serious misrepresentation. Mr. J. C. B. Gamlen however, my co-executor, desired me to use my judgement in all these matters, and I am in consequence entirely responsible for any changes made in the order and expression. Certainly the book appears to me to give a sufficiently exact view of Wilson's faith.

I desire to thank those who have been so kind as to lend me letters and manuscript essays, especially Professor G. F. Stout, F.B.A., Mr. H. W. B. Joseph, and Mr. H. A. Prichard. The Editor of *Nature* has courteously permitted the republication of part of a letter upon Inverse or *a posteriori* Probability, and the late Bernard Bosanquet, F.B.A., most readily sent all Wilson's correspondence with him for the use of an editor. The late F H. Bradley, O.M , with whom I more than once discussed the publication of Wilson's criticism of himself, said · 'Why not? it may help the sale of my own book; but I cannot promise to read it' Mr. W. H. Fyfe, Head Master of Christ's Hospital, and Mr. Gamlen were good enough to criticize the Memoir. I have, in conclusion, to thank the Delegates of the University Press for undertaking, in these hard times, the publication of a book designed to do honour to a distinguished occupant of the Wykeham Chair of Logic, and the Staff of the Press for the care they have given to its production. One of the Delegates, Mr. W. D. Ross, Deputy Professor of Moral Philosophy and Fellow of Oriel College, has helped me very much by reading the proofs and making valuable corrections. I am grateful to Dr. A. C. Ewing, formerly Exhibitioner of my own college and sometime Senior Demy of Magdalen College and Bishop Fraser's Scholar of Oriel College, for making the Index, and to Messrs. Elliot & Fry and to Mr. Prichard for permission to reproduce photographs, each in its kind so perfect.

A. S. L. FARQUHARSON.

3 GROVE PLACE,
OXFORD,
12th August 1925

MEMOIR

MEMOIR

Laboriosus et diuturnus sapientiae Miles.

ALMOST all we have of Epictetus, the Stoic philosopher, are lecture notes which a Roman governor gave to the learned world of the second Christian century, with an apology for their want of form and finish. In the dedication Arrian says that 'when Epictetus spoke, his purpose was to move his audience to virtuous ambition: he had no second thought. If then these memoirs do the same, they will do what a philosopher's words should do; if not, you must believe that when the Master spoke he forced the class to feel what he meant them to feel.'

Any reader of the lectures here printed, who was privileged to hear them delivered, will understand what Arrian meant. He will miss the living voice. Not that Wilson had any rare graces of gesture and delivery, but that he could communicate his own earnestness to his hearers. 'He had a tone in oral delivery which seemed to convey sense to those who were otherwise imperfect recipients.'[1]

Wilson was not a moralist but a logician, yet he so touched what appear to many the dry bones of logical doctrine that he was as one contending for moral verity. This was clear as he read his lecture, clearer in his informal class, clearest of all in conversation beyond the school. Thus it was well said by a colleague,[2] not a professed philosopher, that, whatever the theme, Wilson was the best talker he had known, because all he heard and said he took so seriously. He forced his class to feel what he meant them to feel; that is surely the sign and secret of the great teacher.

[1] C. Lamb of S. T. Coleridge, Edmonton, 21.xi 1834. The Rev L. R. Phelps, Provost of Oriel, one of Wilson's first pupils, says 'he made philosophy absorbingly interesting and, yet rarer gift, made you think it really mattered' (letter to H. W. B. J., 19.ii 17).

[2] Mr L. L. Price, late Fellow and Treasurer of Oriel.

The breath has not altogether left the body of these discourses. Unfinished and uncouth as they remain, they still exhibit unmistakably the height which this vivid and indefatigable spirit had won in half a century of arduous and perhaps too solitary devotion to Truth. Behind the inconsistency of incompleteness, amid arid tracts of controversy, we may trace the footsteps of a persistent investigator, the purpose of a living mind.

This then, which he reached so hardly and held so tenaciously, is what Wilson would have desired to live; beside this the temporal record of his days must appear trivial, almost irrelevant. Yet men in the busy world, who once heard him and who, coming on an old note-book, are surprised to find how much they have forgotten,[1] may care to learn a little more about their old master; his many friends in Oxford will piece out the imperfection of an attempt which piety has dictated I am to try to depict, as I knew them, not only that eager absorption in the problems of his Chair, that boyish confidence in the general interest of his own pursuits (the zeal which so easily besets the student), the fierce intellectual hatreds, the jealousy for truth, the uncompromising exposure of what he deemed imposture; but the little things also that endeared him to us; his chase of the impossible, his volunteering enthusiasm, his confidence in your sympathy, his everyday goodness, simplicity and human kindness; all the minute diversities that crowded and dissipated the tireless sequence of his hours.

Wilson was already a professor and a philosophic force in the Oxford in which I found myself as a freshman in 1890. Already he was, mainly by his Volunteer activity, a familiar figure round whom legend began to form. Some said, for example, that Mrs Wilson had been a Fraulein Moltke, others that her father was Hermann Lotze, the philosopher—and this I have seen in print. For the men who read *Greats* he was fast becoming an intellectual stimulus which recalls the power of Socrates over Athenian youth Barely turned forty, he appeared already old, save in voice and movement. Below medium height, his small-

[1] Suggested by words of Sir Herbert J Creedy, K C B, Under-Secretary of State for War He lent me his copy of Wilson's *Lectures on Inference*, with some of Wilson's autograph corrections.

ness was emphasized by his broad forehead and full philosopher's beard, red once, now fast turning that beautiful white which in red hair is the compensation of age. His keen yet pensive eyes looked out from under dark, strongly defined, eyebrows; his short firm step and rapid motions were an index to a decided and impetuous character. He would be seen riding most recklessly through the traffic on a bicycle, a rare vehicle in those days for gownsmen, young or old, though a few years later it brought Wallace to his untimely end.[1] On Sundays you might meet him walking in the Parks or Mesopotamia, in a double-breasted frockcoat and a minister's round felt hat with guard attached, looking much what one thought a German professor might be When the University Corps paraded, he led a small section of cyclists, in blue serge knickerbocker uniform and white spats, and we came upon him in the villages round Oxford or saw him stand on Cumnor Hirst, the centre of a miniature staff, directing the manœuvres of the sadly small companies of enthusiasts who in the 'nineties kept alive the tradition established by Warre of Eton.

'Id vas an audumn afdernoons, vay down in '89,
De pully poys of Oxford vas geranked in pattle line
All brebared for vight and ploonder, und 'tvas peautiful to see
De philosopede gontingent und de footman-cavallrie.'[2]

In those days he lectured in a converted racquet-court in Oriel Street He first discoursed very quickly and fluently but not very clearly, so far as delivery went, on the day's topic; using frequent blackboard illustrations from geometry, and usually overstepping the thirty-five to forty minutes he allowed himself. He then paused and said: 'I will dictate a paragraph.' This he read from the note-book[3] of an earlier pupil so rapidly that it was impossible to get it all down and versions had to be collated after the lecture. He was so much engrossed that he failed to appreciate our difficulty. In later years I remonstrated

[1] William Wallace, White's Professor of Moral Philosophy, was killed by a fall from his bicycle in the spring of 1897.

[2] From 'Des (sic) Kochmannshed', the *Oxford Magazine*, 4.xii.89. Wilson served in the O U R V Corps (1st Vol. Bn. Oxfordshire L.I.) from [illegible] 1904 Lieut. 1889; Capt 1891 Started a Cyclist Section 1889; P. S. 1890; T 1891; retired as Hon. Major with V.D. in 1904.

[3] At that date, the notes of Prof. W. A. Craigie.

with him on this but he only replied: 'What they couldn't hear was probably not worth hearing.' His appearance and gestures were an odd mixture of the serious and the comic, recalling Boswell's description of Johnson, only here there was a tiny cockboat of a man, there an unwieldy galleon. Nevertheless, his force of character constantly prevailed over any tendency to levity, and his power over the class may be gathered from a single narrative. He had introduced into his lecture a reference to the mathematical calculus. The clock was on the stroke of one when he ceased to dictate; then without warning and looking fixedly at a man in the first row, he said: 'Do you *all* understand the calculus?' Under cover of the silence which followed he walked smartly to the door, locked, or pretended to lock, it, and then standing there with his back to it said with decision: 'No one shall leave this room until you *all* grasp the essentials of this simple matter' And then and there he returned to the blackboard and began his demonstration, until (such was his ardour and so late the hour) all in the room appeared convinced that the veil was lifted from what had been and remained to most, I fancy, a region quite unknown. It was like the lightning flash and then the outer darkness. Yet philosophy too has its phenomenon of conversion and such moments may irradiate the soul.

The intellectual enthusiasm of this, the prophet's faith in your powers and his own, the lack of proportion, even the occasional absurdity, were part and parcel of Wilson's native composition and are represented in the lectures now printed. What is absent is the wonderful energy diffusing itself from teacher to hearer; now awakening and illuminating, now dazzling or numbing him, not however so much by the quick verbal fence of a Socrates as by the depth and seriousness of his own conviction. He compelled you, at least at the moment, to assent if not to comprehend. No one thirty years ago was a better antidote to a certain spirit of irony, of intellectual suspension, almost of scepticism, which ruled in Oxford, easily charming the restless mind of adolescence, so lately released from the discipline of school. Destructive his dialectic was, too polemical perhaps, yet positive and bracing by contrast with those cold negative currents which filled the air; the irony, say, of Arnold or of

Nettleship, the higher criticism and the many contemporary solvents of inherited belief.[1]

> 'We have but faith: we cannot know;
> For knowledge is of things we see.'

So sang the Laureate from his intellectual throne; but Wilson's faith was in knowledge; the essence of his creed a knowing which saw its object and apprehended what it saw.

In 1892, the philosophy professors in Oxford were William Wallace, Wilson, and the late President of Corpus. Mr Case was lecturing chiefly on Bacon and Aristotle. He had lately published his *Physical Realism* and the doctrine was opposed to the current views Realism of any kind was not then the fashion in Oxford Wallace lectured in Moral Philosophy, principally on the period from Kant to Schelling, blending much metaphysic with his morals Harsh in voice, rugged and remote in manner, his learning and literary allusions, his rare grace of style, softened his moral rigour Suggestive, appreciative, seldom dogmatic, unmethodical and discursive, his lectures flowed on without beginning or end Those were the pleasantest hours of the week. Wilson was a valued complement to his colleagues. Difficult to hear and to follow, confused in expression and at times in the sequence of his argument, severely unadorned in diction, he yet seemed to develop his subject from the beginning. Shirking no crooked questions, he seemed in the end to make some rough places smooth. His confidence was comforting to beginners. He was still under the strong influence of Kant and Green, his logic purer and less contaminated with the theory of knowledge than it later became. To omit from this account the writings of Mr. F. H. Bradley would be to ignore the most stimulating of all influences, at that date, to the novice.

Wilson discoursed on logic for three hours in each week and during each successive term. He began in the fall of the year

[1] The phrase was suggested by *Religious Changes in Oxford during the last Fifty Years*, by R W Macan, D Litt, Oxford, 1917. My remarks are the recollections of youthful impressions; a broader and saner outlook will be found in my old tutor's paper. Dr Macan says little of the higher critics. I vividly recall Dr T. K Cheyne's bold and eloquent sermons delivered as Canon in residence at Rochester, a current of mountain air flowing into a rather confined and narrow atmosphere.

and concluded, or rather failed to conclude, on the eve of the June examination. He gave, besides, informal instruction, two hours once a week. Few men commenced, fewer still continued this. He was less known or less regarded then by the college tutors. Later, old pupils, now teachers themselves, sent their men to this class and it became an important feature of the philosophical course. I remember however one year when, after the first week, the present Bishop of Carlisle [1] and myself were the only attendants. Mrs. Wilson was ill and away from Oxford and he did not always keep his appointment. He took us at Oriel, in the set we understood had been Cardinal Newman's. He was informal in the traditional Oxford manner; we two, each in a large arm-chair, he standing before the fire. We were denied the weakness of a note-book. He stood up or walked about, thinking aloud. He would invite a problem and then 'develop' it at leisure, in two or three successive meetings. He had a way of becoming rapt in a brown study, sometimes for five minutes together. Then he would relax his neck muscles,[2] his head bowed forward very much and his eye dimmed and lost its expression. You were present at what seemed a philosophic travail. Sometimes he gripped the mantelpiece, swung himself back and looked long and very earnestly at a portrait of Jowett, staring through it rather than at it.[3] Sometimes he walked to the window and gazed intently and sadly at what I supposed was the evening light on Merton Chapel tower.

'He would take, in his informal instruction, what men thought simple questions and show how much lay in their solution. His mind, said a pupil, was like a vice; so hardly could slovenly thought or uncriticized phrase escape from the tenacity of his attack.' [4] Indeed he seemed always to be trying to disentangle the question on its own merits, and I believe that he was

[1] The Right Rev H H Williams, D D., Hastings Exhibitioner of The Queen's College, Oxford, afterwards Fellow of Hertford and Principal of St Edmund Hall, a pupil and intimate friend of Wilson

[2] This has been observed in many teachers Philostratus in his *Lives of the Sophists* notes it I have read the same of Schelling.

[3] These characteristics are more racily described by S Ball in *The Oriel Record* (Sept 1915), vol II, p 248, and in the *Oxford Magazine* of 22 x 15.

[4] From the *Proceedings of the British Academy*, vol VII, by Mr. H. W. B. Joseph He kindly lent me his material and gave me leave to use his just and elegant memoir (Referred to as H. W B J.)

scrutinizing his own thought rather than ours. And he varied very much. Some days he certainly repeated himself and went round and round like a man skating figures. So have I watched him cutting very small circles on the ice in the meadow on Iffley Road. In a letter[1] he himself speaks of a later occasion when he was 'very tired and really only talked mechanically, and without truly attending'. That was sometimes his case even then; mainly, I think, from domestic anxiety. He had a way of holding his breath at intervals and then releasing it in a long and loud expiration, and he would wind up one hair of his beard and break it with a vicious snap. He said, on his portrait being painted, that his friends complained that his beard was too short. 'They don't understand that my beard varies. When I am working at a problem something has to come out. If the problem doesn't, the beard must.' If a subject interested him peculiarly, especially when he was polemical, he would reveal signs of physical excitement, signs which grew more marked with age. The preliminary signal was the snapping of his fingers in a series of rapid pistol shots from behind his back, and he was often betrayed into unphilosophical explosions. Thus: 'The time has come for stronger language. what the devil does the fellow mean?' When discussing the paralogism of Achilles and the Tortoise, he would break out, almost as though Zeno were in the next room: 'What does the fellow mean by *never*?'

Thus he attempted to impress upon his class the serious nature of the quest for Truth and revealed by his own practice the method of pursuit; he never deluded his pupils with ready-made result or easy epigram and so, when he reached a conclusion, he was most confident of its certainty. Naturally these methods did not suit all men; a few, even some with a gift for philosophy, soon deserted his lectures and many found the informal instruction, especially as he grew older, too much of a soliloquy and with too little attention to their own problems. One of these said: 'If the *virus* did not bite, it made one immune,' and laid his own immunity complacently to the professor's account. But ordinary youth is tolerant of foibles in a respected teacher and these idiosyncrasies of Wilson appeared

[1] To Mr. H. A Prichard. (Referred to as H. A. P.)

to most an inseparable accident of his devotion to their conversion. One last reminiscence before I turn to his earlier years. About ten men were present at the first informal class of that year. He was treating by request the Kantian paradox. 'the mind makes nature, the material it does not make.' He paused in his familiar manner and bending forward looked fixedly in the face of a Balliol man in a ragged scholar's gown. He, supposing himself to be interrogated or in a spirit of solemn mischief, blurted out: 'But why shouldn't that table be there, just where we see it?' Silence attended the result. The professor sprang once into the air; said very fiercely indeed: 'Why shouldn't it?' and then relapsed into reverie. The scholar never returned, but I have sometimes wondered whether the shock set Wilson determinedly to work clearing the path which after many days led him far from the idealist solution he then accepted or appeared to accept. I say 'appeared', because even then he did not altogether acquiesce, outside the lecture-room, in the objective idealist solution which for many years he continued to dictate, in slightly modified forms, to his audience.

The only son of the Rev James Wilson,[1] a Methodist minister of the New Connexion, by his marriage with Hannah Cook,[2] daughter of John Cook of Newcastle-under-Lyme, John Cook Wilson was born at Nottingham, the 6th June 1849. In January, 1859, he was sent to school with a Mr. and Mrs Morgan, to Shireland Hall, near Birmingham. A sheaf of his letters from this academy are preserved but, save for two studied and carefully indited compositions 'announcing the approaching vacation', they are not dated except by the days of the week. Like most boys' home letters, they are largely made up of answers to inquiries about health and recreation, and of requests, often very firmly pressed. But not for money. The little boy already

[1] James Wilson, born 2 XI.14, died 1 III 1902

[2] Hannah Cook, born 5 VII.18, died 16.VII.02. A letter to J. C. W. on his mother's death says: 'She was one of the brightest and cleverest old ladies I have ever known.'

realized his parents' straitened means and (to his mother) is most regretful about torn clothes, broken garters, and lost shoelaces. He shows a marked enthusiasm for study, music and drawing, for flowers, the capture of butterflies and dragonflies, and for scientific toys like the kaleidoscope. This last he promises, on his return, to his little sister to comfort her in some trouble. The simple veracity and strong affection of the grown man are already there. The letters nearly all actually fill three to four sides of an ordinary folded sheet; one page or more to his father, one to his mother, the third or part of the fourth to the favourite younger sister whom he calls 'Micky Meg'.[1] Here are some extracts: 'I am in Delectus in Latin, I read some sentences such as *Cessator esse nolo*. The minister nearly always preaches about Charity.' 'You tell me I must not tell tales of the boys but Mr. Morgan said that when one boy hurts another the boy must tell him nevertheless I will do what you tell me.' 'Give my Grandmama my love, tell Emma she is a skunk and give Maggie this letter.' 'Thank you for the butterfly, I like shooting with a bow very well so I bought a little [bow] and 2 half penny arrows but the bow broke money thrown away but I hope you will forgive me this once. I gave 6d. to Mrs. Morgan's birthday present to which I do not think you will object.' 'I don't like to enter the cricket club because we have to pay but I can find plenty of amusement without.' 'I am in octagons and hexagons now. I have not time my dear papa to send you a specimen of what I am drawing I am sure. I practice every day and the music master comes on Mondays and Thursdays their are 2 drawing days Tuesdays and Fridays. I draw on Fridays we are lear⟨n⟩ing that funny tale of John Gilpin in Cowper which I like very much.' 'What you say about the cuckoo brings something to my mind they call me Cook here to distinguish me from the other boys and William Hedges changed it into cucko. I assure you Papa that I have plenty of play.' 'As regards my study we have just been examined I want a NEPOS bound in boards with copious notes.' 'I am just got into a melody of Beethoven in music but I cannot play a regular time. I cannot keep time to every note yet.'

He was very homesick and looked forward eagerly to the end

[1] Margaret Wilson, born 1856, died 1886.

of his first half on the 16th June 1859, the school assembling again on the 1st August. Just before the 1st June he writes: 'I am not very happy [his first sentences are usually by way of reply]. I am the most *unhappy* boy in the school. I can't help crying for you and Mamma. My chum who always has been my friend kicked me out of bed the night before last to amuse a new scholar and called me names, but I got him to be as warm a friend as ever, but notwithstanding this I am very *unhappy*.' 'You ask me to strike the key of pleasure but I have none to tell you of.' Of childish piety these are examples: 'I hope the Lord will bless me, dear Papa. There is a boy in our school named Penrose who used to live at Wakefield who opened his mind to me and we resolved to pray and read and try to be good so talk a great deal more religion to me.' 'The Lord does hear the prayer of the young for I asked the Lord to grant many conversions to your ministry.'

Mr. and Mrs. Morgan were evidently good kind people; how long he remained with them is not certain. In September 1862 he entered the Grammar School of Derby, as a boarder in the school house, Mr. James Wilson being at the time stationed at Derby. After two or three years, a new master, the Rev. Walter Clark, B.D., was appointed. He had been Captain of the school at Shrewsbury, under Kennedy. A scholar of Magdalene, he was placed fourth in the 2nd Class in the Classical Tripos, being bracketed with H. Cecil Raikes, afterwards Member of Parliament for Cambridge University. 'When he came to Derby he found everything at a low ebb: there were but few boys, there was little or no public spirit among them and for some time the school had had little or no success at the Universities'[1] Wilson saw things so much transformed by Mr. Clark's energies, that it was hard to remember what the school really had been. He chose his masters well, encouraged modern subjects and natural science, improved the games, and erected a boat-house, and, in the result, there came from Derby School, Wilson himself; a 2nd Wrangler; Mr. E. W. Hobson, a Senior Wrangler; many scholars at both Universities and one man who rowed in the Oxford Eight and took a 'first' in Classics. Mr. Clark was, Jowett said, 'a good scholar and a man of uncommon energy

[1] Letter of J. C. W., 10 III.84.

and . . . raised the Grammar School from small beginnings to the position of one of the first Grammar Schools in the kingdom '.[1] Wilson was Captain of the School from 1865 to 1867, and of the cadet corps 1866–7. After he went to Balliol his old head master continued to help him by receiving him into his house in the vacations, when 'he had much important reading to do'.[2]

Mr. J. W. Sharpe was some three years his junior at Derby and a constant friend, corresponding with him on mathematical and philosophical topics. 'He was', he says, 'an honest, true, brave, high-spirited man and was the same when a boy at school. The head master befriended him and he always spoke of him with gratitude and affection, and would never pay any attention to any strictures upon him, which many of us boys were ready enough to make. In fact, I never knew Wilson to listen willingly to blame nor to contemptuous speech of anybody,—nor would he use such speech himself, except for sins of philosophy or scholarship, and there he would break out and become violent, even were the matter but a Greek particle.' . . .[3] 'He was 17 years of age in the year 1866, when I, then nearly 14 years of age, became a boarder. . . . He was head of the school at the time. He befriended me in every way. He was a kind, high-spirited, cheerful-minded boy, always ready to suppress any disorder which he happened to consider it desirable to suppress. No one resented the forcible measures to which he promptly applied himself, for he enjoyed a singular reputation amongst the rest of us boys for sincerity of character and directness of method. In fact, I have never met anybody who excelled him in these particulars. . . . Games were not of much account among us except as an exercise and a pass-time and Wilson took little trouble about them, though he was a strong and athletic boy. Most of us were idle, some worked hard and Wilson worked very hard. He was a very able mathematician by nature and was good enough for ⟨one of⟩ the first three wranglers in any year at Cambridge. . . . His father, . . . as is

[1] Testimonial letter to Mr Clark, 5 III 84

[2] Letter of J. C. W, 10.III.84.

[3] Letter of Mr J W. Sharpe, sometime Fellow of Gonville and Caius, 25.V 16, to H. W B. J.

the custom of the Methodists, was never more than three years on one station; and his son once or twice told me that they were twice reduced to dire straits, i.e. on two stations, because his father would not model his teaching on the opinions of some powerful deacon or other, who thereupon took care that the teachings of poverty should be inflicted upon the recalcitrant and stiff-necked minister. Wilson's stores of energy, both physical and mental, were to me always astonishing, at all times of my life. Nothing depressed him, and no prospect of work appalled him, and hardly ever indeed proved too much for him.'[1]

Professor Hobson says: 'Wilson was, when at school, much interested in the drilling of Volunteers. One day when the Drill Sergeant was absent, Wilson was set to drill us small boys. We imagined we were going to have an easy time, but we found we were quite mistaken, as Wilson turned out to be quite a martinet who compelled us to do everything with extreme care. I have a vision of seeing Wilson in the Entrance Hall of the School busily turning over the leaves of an immense Dictionary (probably Liddell and Scott), when I was told he was preparing for the Oxford Senior Local Examinations. I remember the feeling of awe with which the sight inspired me.'[2]

It was T H. Green's reputation and in part Green's initiative that brought him to Oxford. Desiring to bridge the gulf which separated the poorer classes and the less privileged schools from the Universities, Green had earnestly supported a favourite scheme of Jowett's by which boys who had done well in examinations like the Oxford Local might, provided they had offered Latin and Greek, be elected to an exhibition at Balliol.[3] Wilson profited by this He came up with one of these exhibitions in January 1868, assisted also, I believe, by his head master's generosity.[4] The College had instituted a hostel in St. Giles',

[1] J W. S to H W. B. J., 21 v 16

[2] Letter of Mr E W Hobson, Sc D, LL D, F R S, Fellow of Christ's, Sadlerian Professor of Pure Mathematics, Cambridge, to H. W B J., 15 v 16

[3] For Green's interest in the scheme see *Works*, vol iii, p. cvii (Bradley's memoir)

[4] 'In several instances, to my knowledge, he generously helped those who had difficulty in meeting the expenses of a University education': Letter of J C W., 10.iii.84.

where poorer men might lodge and board at less cost than in college. Green himself lived there both before and after his marriage in 1871 to John Addington Symonds's sister. Here Wilson read for both mathematical and classical honours.[1] He had few friends, lived to himself and was happy enough, studying very hard, rising early and sitting up late. In November 1869 he was raised to the status of mathematical scholar and resided continuously until the summer term of 1873, never moving into college.[2] Thus he missed one of the happiest and best of influences, the society of young men congregated within the walls of a college. At Balliol Green's influence was strong upon him; he followed his courses upon St. Paul's epistles as well as his ordinary instruction. He attended Chandler, a very learned Greek scholar, and an early course by William Wallace on the *Politics* of Aristotle. He heard Mr. Case too and his life-long friendship with him depended largely on their common friend Aristotle. One thing he would say he learnt from Green, to divide his own lectures into paragraphs. This has left its mark on the present lectures. When he began to teach, he imitated too Green's patient method of weighing every detail of an author he was criticizing, spending an inordinate labour on minuter issues, which the advance or change of ideas has itself antiquated. Both Wilson and his master thus often seem unable to discern any good in the author they are handling, in this the very opposite of Wallace. This tendency has a bad effect on the beginner, rousing his natural sense of fair play and thereby producing the reverse of what is intended, or else making him run off with the notion that philosophy preserves the errors of the past in order to refute them, while science quickly leaves mistaken theories behind.

His mathematical teacher was Henry Smith,[3] a fascinating and richly endowed character for whom Wilson had an undying admiration. Mentioning Chandler, Green and Smith in his

[1] 1st Math. Mods 69; 1st Classical Mods 70; 1st Math. Finals 71; 1st Lit Hum 72.

[2] The late Rev F. H. Hall, Fellow and Dean of Oriel, told me that the night of his election at Oriel was the first Wilson had spent within the walls of a College.

[3] H. J. S. Smith, F.R.S., Ireland Scholar 48; Fellow of Balliol 49; Savilian Professor of Mathematics 60–83; Fellow of C.C.C. 73–83.

inaugural lecture[1] on the 15th October 1889, he says: 'Whatever a man's own unworthiness may be, he is allowed to praise his teachers. For me, however, the task is altogether too difficult. I have had such great teachers.' A reviewer of Smith's mathematical papers, posthumously published, says that the lesson they convey is that 'only an investigator to whom any slurring over of difficulty or exceptional case is absolutely repulsive, can hope to make a real advance'.[2] This is perhaps the great lesson that he learned from these great men. Those who were not privileged to work with Wilson, or who have not, as I have, looked through his manuscripts, can have little idea of the way in which he took this lesson to heart. 'An investigation', he wrote to a favourite pupil, 'carried on perseveringly for a long time may end in the discovery of a fact of consciousness which upsets the theory so laboriously worked out. The utmost gain one has seems to be that one has found out what will *not* do. Now this is a gain, but one is not at once prepared for the new effort which it suggests. . . . The trouble is that one feels life is so short, *ars longa* but philosophy seems very much longer.'[3] This is the scholar's last lesson, the clue perhaps to what is sometimes called Oxford irony.

He went away more than once with Jowett, who became Master in 1870, to Malvern, but not, I think, as an undergraduate. He shared the common affection of all Balliol men for their great Head, but not the extreme reverence of some like Wallace. He was not in the least restrained from criticizing him, even his work on Plato. He perhaps underrated somewhat a philosophy that was so much compact of common sense; the Master's irony too and subtle suspension of judgement rather escaped him. It will not be amiss to add one authentic anecdote to the multitude that have gathered with years round that venerable head. Wilson took an essay to the Master and himself described the event as follows: 'I knew the subject was a stiff one, for I had chosen it myself. I had taken uncommon care over it; in fact I suspected I had gone into it a little too deeply

[1] Printed less introductory paragraph at §§ 355–64

[2] Major MacMahon in *Nature*, 27 IX 94

[3] J C. W. to H. A P., 18 XII 06, quoted more fully in *Mind*, N. S., No 111, p. 300 Mr. Prichard has kindly allowed me a free hand in using his article and his private correspondence with Wilson.

for Jowett. So I read it very slowly and pretended to pause to take breath, to give him time. When I had finished, he looked up and said, "Been running, Mr. Wilson?"'[1] This story he would tell in great glee, although probably he had not succeeded so well as he supposed. The remark at least showed Jowett's acquaintance with his pupil's habits of life. Wilson's regular exercise, at this time, was to *run* down to Folly Bridge, get into a sculling boat at Salter's, and scull as far as where the Free Ferry now is, never farther; then scull up again, and so at the double once more back to his books.[2] The little red-bearded figure was familiar to the watermen along the Isis and no doubt to tutors on the towing path

On the 10th April 1874 he was elected Fellow of Oriel, out of a strong field.[3] He was justly proud of his success, in later years, and used to say: 'they were better men in some ways than myself but I defeated them by weight of metal' He had indeed gained a double first in both Moderations and the Final Schools and now offered as a candidate at Oriel, besides the *literae humaniores* subjects, mathematics and the *De Anima* of Aristotle. He however put down Greek Iambics for his principal special subject, unnecessarily as this was a normal part of the examination. He was then, as later, covetous of recognition in the narrower fields of scholarship.[4] 'When he came to Oriel, he was obviously overworked, rather emaciated and very languid. He used to play the piano a good deal, and, I fancy, got into trouble with Provost Hawkins for playing at unsuitable hours.[5] The Provost also objected to persons smoking in Wilson's rooms, which were over his study, as he said the smoke came down the chimney. . . Cycling, hockey and volunteering did a good deal for his health and gave him the robust look he afterwards

[1] The words are, I think, precise Wilson told the anecdote to my wife. The sayings and anecdotes are not selected in any partial spirit and are, unless otherwise stated, experiences of my wife or myself

[2] This and the amusing fact about the Iambics I owe to F H Hall

[3] It included Mr. Andrew C Bradley and F. H Peters, one of the brilliant Harrovians of that epoch, afterwards Fellow of University.

[4] viz pure scholarship or criticism In 1873 he won the Chancellor's Prize for a Latin Essay, 'Quaenam fuerit revera Epicureorum philosophia'

[5] By his own admission the chief offender was Mr Thomas Case, afterwards Waynflete Professor of Moral and Metaphysical Philosophy, Fellow of Magdalen and President of C C C He was then a Tutor at Balliol

had. I don't think he took much interest in men's sports, though he used to come to bump suppers. The only remark of his I remember in this connexion was when he saw some men practising " heading " a football in the *quad* and told them he was glad they had found some use for their heads.' [1]

These last notes are by a close friend, born on the same day in the same year as himself, whom he found already a fellow when he came to Oriel in 1874. The Common Room was then, as it had long been, a distinguished body, though without the colour for which it was best known in Newman's time. It included D. B. Monro, W. Stubbs, J. W. Burgon, Poste, Bryce and C. L. Shadwell. In after years Freeman, Froude, John Wordsworth and T. K. Cheyne were, as professors of the University, fellows, and in 1883 a well-known Aristotelian, Sir Alexander Grant, became an honorary fellow of his old College.

Wilson did not reside long within the walls, soon marrying and establishing himself in North Oxford. In 1873 and 1874 (or 1874 and 1875) he had visited Gottingen,[2] no doubt specially to hear Lotze.[3] To judge from his lecture notes he did not attend the logic course. Though he always retained a deep reverence for Lotze, he was not so much influenced by his doctrine as would have been natural at that impressionable age. He was however affected, doubtless, by the general reaction from the critical idealism of Kant, and from Hegel, which was then in the air. His development was rather due to reaction from the English writers, the reaction from Mill, as well as from Green, Bosanquet and F. H. Bradley. He adopted Lotze's method of discussion followed by dictation, but without the ease which enabled Lotze to dispense with notes in either part. At

[1] Letter of F. H H , 30 xi 21

[2] I have not been able to verify the years He himself stated in writing that he was at Göttingen in 1873 and 1874 ; he stated however that he was elected at Oriel in 1873, a year before the actual date, and may have been wrong here also (cf. Letter 37, p. cxxiv)

[3] Hermann Lotze succeeded, after an interval, to Herbart at Göttingen. Wilson repeatedly employed Lotze's illustration of the relation of individual colours to colour, to elucidate ' the universal '. He was also much affected by Lotze's views as to the moral, aesthetic and religious consciousness. He held his view of punishment as retributive and the difficult opinion that the pleasure we take in its beauty or goodness is what gives the beautiful object or moral act its value. (He detested but used this word *value*.)

Göttingen he made himself nearly as familiar with German as with his native tongue; he was however not a devoted student of German literature, even of the philosophers. In Hanover he met the lady who was to become his wife, and it was this perhaps which led Miss Margaret Wilson to accompany him on a visit to Germany in 1875. Returning to England, he began to lecture and instruct at Oriel and Lincoln in the Michaelmas term, 1875; for the two colleges then shared teachers in several subjects. He took freshmen in 'ordinary' logic (Mansell's Aldrich and Mill, with Fowler) and in Dr. Magrath's and Trendelenburg's selections from the *Organon*. More advanced courses were in the History of Greek philosophy, with *Ritter and Preller*, the Development of philosophy from Bacon to Kant, both the *Ethics* and the *Analytics* of Aristotle, and a characteristic and thorough set on the *Republic* of Plato. At that time the system which now makes a college lecturer virtually a University teacher was beginning; thus men of other colleges heard him. He also taught from time to time for Balliol, Pembroke and Hertford. He was for a while Junior Treasurer of his College and a keen and sometimes unorthodox Librarian.[1] He was Junior Proctor in 1885, and Public Examiner in Classical 'Greats' in 1887, but 'found the responsibility of deciding on men's classes so harassing that he held his office for only one year of the three years' term. At all times and in all matters he was incapable of doing things by halves.' Otherwise he took little part in University affairs, spending what leisure he had from teaching in mathematical researches, in symbolic logic and in Greek and Latin criticism. After fourteen years' diligence as a lecturer—he seems, to judge from the *University Gazette*, to have been the busiest philosophy lecturer of the day—he had the good fortune in 1889 to be elected, at the comparatively early age of forty, to succeed Thomas Fowler in the Chair of Logic, among his rivals being Venn and Mr. Case. From his election to his death he occupied himself with the development of the lectures here printed, in his subsidiary studies, in volunteering and in the work of a Governor of his old school. In the last he took much interest, especially in the attempt to secure his old master preferment and, on his premature death,

[1] He was Subdean and Librarian 75–92, Junior Treasurer x 87–x 89

in the choice of a fit successor. A strong and convinced Liberal, in both political and intellectual questions, he happily did not feel drawn to work of a semi-political semi-educational character, within or outside Oxford, confining his exuberant energy to his duties as student, teacher and citizen-soldier. He became fellow of New College in 1901, by virtue of his Chair, and an honorary fellow of Oriel in 1909. The 'little University'[1] of St. Andrews honoured itself and him, in 1906, by conferring on him the degree of Doctor of Laws, *honoris causa*, and he became a fellow of the British Academy in 1907, a distinction he did not much relish except as 'showing the opinion of him entertained by Caird and Bosanquet'.

This, with the Presidency of the Oxford Philological Society in 1901, completes his small tale of worldly honours, but when he died on the 11th August 1915 it was said truly that 'for many years he had been by far the most influential philosophical teacher at Oxford' and that 'since Green no one there had held a place so important in these studies'.[2] The explanation lies not so much in what he taught or wrote as in what he was.

His years as a tutor were devoted, so far as production goes, mainly to classical criticism. He read his first paper to the Oxford Philological Society 'On rearrangements of the Fifth Book of the *Ethics*', in 1879, and became a contributor to the *Academy*, then at its best, the *Journal of Philology* and the *Classical Review*. The Oxford Philological Society, as a glance at its *Proceedings* will show, was then in the heyday of its strength. Scholars like Monro, Ellis, Bywater, Rhys and James Murray were in their prime and humaner themes were introduced by Henry Nettleship, Pelham, John Wordsworth, Warde Fowler and Dr. Macan. In the list of members are other redoubtable names, whose silence was as impressive to a novice as the

[1] A *ὑποκορισμός* of affection. 'Our judgement is that the little University has done itself great honour in selecting you for a degree; I do not think there is anyone whose claims appear to me so strong In fact, of course, your great place and prestige, as well as the solidity of your reputation, make it really a distinction which you bestow upon us, a distinction of a type which I strongly covet, that of showing that really good men will accept our honours and that the little place knows how to value what is good.'—B B. to J. C. W, 21 11.06 ('Our' includes Dr. G. F. Stout)

[2] H W. B. J, *P. of B. Academy*, l.c.

standard set by the more frequent readers. In such society and with these men as critics Wilson won his spurs, with papers which here and there show growing philosophical power and interest, always thoroughness and critical and analytic ability. He had begun with a study of the *De Anima*. Torstrik's edition, no doubt, had turned his attention to what may be called the higher criticism of the philosopher. Acute minds were just then applying to the vulgate of the Stagirite the kind of analysis which had given such remarkable results in Old Testament studies. They were finding traces of later recension in the various treatises contained in the *textus receptus* and pronouncing, somewhat prematurely, on their origin and genuineness. Wilson was attracted into this field, partly by the example of Monro and Grant. In 1879 he published his *Aristotelian Studies I.*[1] He concluded that the Seventh Book of the *Ethics*, chapters i–x, were not written in their present form by the philosopher for the *Nicomachean Ethics*, nor by Eudemus, but contained traces of not only two but sometimes of three versions of the subject, contaminated by a peripatetic later than Eudemus. In 1912 he published a revised edition. He had then come to the conclusion, resting on maturer reflection and knowledge and on his experience in seeing work of his own through the press, that the variants probably represent different drafts by Aristotle himself, left side by side in the rolls of his notes, disordered by oversight or accident and so preserved in their present shape by some reverent editor.

In 1882 he gained the Conington prize for an essay 'On the manner in which the Aristotelian writings have assumed their present form, &c.' Richard Shute was put second by the judges Newman, Bywater and Monro. Both candidates kept the essays by them, in the vain hope of some day bringing them to completion. Shute's was published posthumously in 1888,[2] but Wilson's never saw the light. He continued to work at philosophic texts and at one time was to have joined Bywater in editing the *Nicomachean Ethics*. At least he discussed the

[1] See *Elenchus Operum*, infra, p lxvi.

[2] *On the history of the process by which the Aristotelian writings arrived at their present form* (with memoir), Oxford, 1888. 'Shute died prematurely in 1886, a man of extraordinary acuteness and force of intellect'—R. W. M., l.c., p. 43. Cf. Bywater in *Archiv f. G. der Philosophie*, III. 4, pp. 654–5.

more difficult places with him and for many years they spent Attic nights together in these studies, Wilson also taking much pains over Priscianus Lydus, whom Bywater edited for the Berlin Academy. At the same time he was a busy tutor and lecturer and was working, as will be seen, at symbolic logic and at cognate semi-philosophical semi-mathematical topics.

The effect of all this was a certain diffusion of attention and a devotion to relatively minor issues, which have left their mark on his work. He felt some anxiety to justify himself and writing later to a philosophic friend says: 'Doubtless my great fault is to be interested keenly in different and hardly commensurate subjects, which I work at eagerly in turn. . . . I feel no inclination to write a general treatise on logic but only the parts to which I think I can make real additions. I know the public is more impressed by a "book" on a whole subject, which is indeed a measure of the public's judgement.' [1] He was weighted also by the intense effort of a surely mistaken endeavour to find a mathematical refutation of what, as a philosopher, he believed to be the fallacy of non-Euclidean geometry. 'There is nothing so exhausting, either, as this feverish and energetic grappling with proofs of this kind. I'm in excellent health, but I assure you that the top of my spine simply aches with the efforts I have been making lately and when I have this sign I take it ⟨as⟩ a sign that I must knock off mental work for a bit. I should have added that my work is also impeded by domestic worries.' [1] He had indeed all his life anxiety, pecuniary and other, in regard to his aged parents, his sister and Mrs. Wilson. All this reinforced his native tendency to concentrate on single and minute issues, though he naively attempted to excuse himself by fostering a contempt for the writing of mere books and the vanity of premature publication. Lacking self-criticism and convinced that 'the (printed) letter killeth', in his anxiety to keep an open mind he reserved for an audience of youths work that merited the judgement of the world. He maintained however with some justice that the necessity he had lain under of elucidating texts to novices had been of the greatest service to his scholarship, and here Bywater was at one with him. 'It forced me to translate the beggars,' Wilson used to say, and

[1] J. C. W. to S. C. P., 13.v.01.

Bywater often suggested ironically that German editors made faulty emendations 'because they would not use, or (better still) make a *crib*'. So Wilson praises Poste for publishing his classical editions always with a translation.[1] The desire for exactitude, the trick of the teacher, the logician's care for method, all conspired to lead Wilson to part regretfully, if at all, with his scaffolding; he would insist on showing you how he reached the truth, however tortuous the route he had pursued. This made his later papers intolerably tedious, affecting even the style; notably when, after an evening spent with the Greek tacticians in a promised discussion of the Greek word for induction, he ended close on midnight with the remark: 'I hope now to have convinced you all that the tactical uses of the verb throw absolutely no light on its meaning for philosophy.'[2] Here, as in logic, he built his knowledge on a few first-rate authors, commentaries and grammars, but secondly on comprehensive induction, almost of the Baconian kind. Rightly too he laid stress on preserving a feeling for natural usage, on the force of the actual context and on the tendency to inequality and iteration of writers absorbed in their subject-matter. In his lectures he recurred again and again to the unconscious evidence of natural speech and would press convincingly the folly of looking even in Aristotle for dead terminology or isolated dogma. For him the language even of the *Organon* was no petrified lava stream but a flowing river. I remember a discussion in which the Greek word *εὐθύς* (straight) was under dispute. H P. Richards, rather a precisian among philologers, held that the word must mean 'directly to a destination'. Inasmuch as the context implied a change of direction, he desired to make an emendation. Wilson stoutly opposed this. We met at Wadham College, where you approach the Common Room by a newel staircase. As we came away Wilson took my arm and chuckled, in my ear: 'We surely went up *straight* from Hall, we didn't go up screwed.' Here is an example of his way of handling a problem of interpretation: 'Before considering

[1] 'Nor did he ever offer a commentary on a classical text without a translation'—*Obit* of J Poste by J C W in the *Oxford Magazine*, 4 VI 02.

[2] O P S 1901. Those who were present will remember the prolix introduction on the logic of evidence to the paper on 'The Similes of Homer', given to the same society in 1908.

your present argument, I re-read the chapter carefully, with the idea of coming fresh to it and letting it tell its own story, without prejudice, for I think before I may have been rather affected by what one thinks are the real facts of the assignment of "praise" and therefore by what one *expects* Aristotle to mean. . . .'[1] He then agrees in part with his correspondent's statement of the difficulty, but thinks he has missed what is probably the most important point. This point he states and tests by comparison with the context Next he gives all the passages from Bonitz where the crucial words occur, only arranging them in his more logical order. He then selects the one which is, he is sure, decisive and so returns to show that his own old interpretation (modified not unnaturally by now) was indeed correct and that his questioner had in fact unearthed a mare's nest.

The year of his election to the Chair was devoted, in spite of the necessity of preparing an inaugural lecture and energetic volunteering, almost wholly to reviews followed by a pamphlet of 149 pages, large 8vo, 'On a recent edition of the *Timaeus*'. This contains only a part of what he had adumbrated in the *Classical Review*, the treatment of scientific and philosophical questions being absent Yet, as it stands, a competent critic[2] pronounces it 'an astonishing example of wide and precise knowledge of his subject and of close reasoning applied to the thought both of Plato and his editors'. No future editor will be able to ignore the learning Wilson has lavished on this work, though its chief value lies perhaps in the reminder to young scholars of the honesty and rigour required of those who would be worthy of the scholarship of the past. The embers of the controversy have long died down, so that the story may be told, without prejudice, as an illustration of Wilson's nature Archer-Hind's edition had been greeted with a chorus of praise in the reviews. This appeared extravagant to critics in Oxford.

[1] Letter to F H H, 22 IX 13, on Aristotle, *Eth Nic* 1101[b] 18 seq The decisive passage referred to is *Cat* 5[b] 15 'What I feel about the whole passage (of the Ethics) is its weakness and formalism He doesn't get at what is really essential in the matter of praise and yet it is not hard to do it' Wilson handled the famous doctrine of Purgation in the *Poetics* with equal uncompromisingness.

[2] H. W. B. J, l.c.

Shrewd Cambridge scholars were of the same opinion. J. E. B. Mayor, that most learned of Latin scholars, wrote to Wilson as follows: 'I told —— that I thought Cambridge was losing its reputation for solid plodding scholarship and was running after the *ignis fatuus* of brilliancy. Men write in the newspapers and try to raise a momentary excitement about one another's publications, but are far more eager to produce something new than something true. Holden and a few others keep to the old paths, but as a rule I am sorry to hear of an undergraduate reading the classics with the new editions.'[1] The reference is obvious. The editor of the *Classical Review*, J. B. Mayor, held much the same opinion. Wilson made two stinging attacks upon Archer-Hind in language provokingly magisterial in tone and suggesting, hardly covertly, literary dishonesty and pretence This was intended A rather contemptuous and unguarded reply in the *Academy* Wilson answered in the same number. The pamphlet appeared in December and was ignored, but Archer-Hind, poor man, never again trespassed in this preserve

There can be little doubt that Wilson's motives were mixed. His principal and just desire was to vindicate English scholarship and to defend two distinguished foreign scholars against what appeared to him ignorant and slipshod censure. 'It will not do to allow foreign critics to think our standard of an edition of a classical author so far below theirs, or our notion of the interpretation of ancient philosophy so anachronistic.' His choler was further moved by lampoons of which he had been made the butt both in the *Cambridge Review*[2] and in the Aristophanic verses[3] which accompanied the December, 1889, class-lists at the sister University. In both cases his second Christian name, his mother's maiden name, was played upon. The Aristophanic verses were sprightly and fair enough considering the occasion, but the 'tribute' in the *Review* accused him of lying. It was headed by a verse in Greek:

ὡς ἐτητύμως ΜΑΓΕΙΡΟΝ σέ γε καλοῦσιν ἄνθρωποι.[4]

[1] J E B M to J C W, 9 xii 89
[2] 14 iii 89 under 'Poetry', p 278
[3] e g ὠνὴρ ἀλλοδαπός τις κατατοξεύσας ἔφη
σπάσειν παράξειν, λοιδορῶν μαγειρικῶς.
[4] 'How justly do men term you COOK'

I found among his papers a reply in similar doggerel:

Μάγειρον εἶπε σ' οὐ κακῶς, αὐτὸν λαθών,
Διηρτάμησας δ' Ἔλαφον οὐ διχορρόπως [1]

'Whene'er you find conceited trash,
Smash, Wilson, SMASH.
When sciolist again writes book,
Cook, Wilson, COOK
His Goose,
Again in its own juice'

To the end he was like an old troop horse, neighing and prancing at the voice of the trumpet, and once in the fray he cared only for victory, was dissatisfied unless it became a rout. Moreover, he caught at the chance for winning a reputation for exact and solid scholarship. That this last was one of his motives I judge to be certain, from an experience of my own. Wilson came in one morning and left for my opinion some printed work in a by-path of Greek scholarship. I sent him that evening a short note on it and was surprised next day by a second visit. 'I want you to work this up,' he said, 'and publish it'; adding gleefully, 'it is not a bad thing for your reputation to attack pretentious scholarship, wherever you find it, and to demolish it.' He followed this up by a letter in similar terms Not till much later did I realize that the man whom I was to attempt to smash was a tritagonist in the old quarrel. Jowett with worldly wisdom wrote: 'I hope your controversy is progressing. Everybody speaks of the desirableness of moderation, which is also a most provoking thing to your antagonist. I desire to stir up your Christian Charity by the last remark. I think some genuine and deserved compliments might be paid to the scholarship of Cambridge.' [2] How little he knew his man! Wilson steered his own course resolutely and published the pamphlet in all its uncompromising fullness. He pricked, as he used to say, the bladder; quartered the Hind in quite decisive fashion Jowett's last words suggest another reflection. In those days there was in Oxford a strange prejudice against Cambridge, now happily unknown. From this even the Olympian Bywater was not immune, though in him it was largely

[1] 'He didn't see that Cook was just the name for you. You made mincemeat of the Hind, decisively'

[2] To J. C. W., 25 IV 89

playful. No one admired men like W. H. Thompson and Hugh Munro more than Wilson and he did. The general opinion, however, was that the 'Archer' was not worth the artillery concentrated upon him and that Wilson's proper remedy was to edit the book himself.

Wilson had been concerned by what he thought the philosophical shallowness of the edition and outraged by attacks upon Aristotle made 'with the acrimony usually reserved for contemporaries'. His words in regard to interpreting Plato in the light of modern philosophy still deserve attention 'We have no prejudice against the attempt to understand ancient thought by the help of modern; we venture to believe that Plato and Aristotle are likely to be best understood by those who have an interest in modern metaphysics. But there is a stage in such interpretation which has brought discredit on it a stage which the individual will still often have to go through, but out of date (we had hoped) in the progress of the race When a man with a new enthusiasm for some modern system of metaphysics begins to see, behind differences of formula, affinities between it and the doctrines of Plato and Aristotle, it sometimes happens that what to him is a discovery, disorders the judgement, so that the reaction against the dull annalistic treatment results in an opposite extreme, almost as much to be deprecated Ancient thought is crudely treated as if it were modern and the natural sense of a text is either not seen at all or passed with contempt. To the student himself something like finality seems achieved; but instead of being the end, it is not much beyond the beginning of critical interpretation · it is merely a stage before the development of an historic sense. It may, nevertheless, deserve respect; for all must begin and all must wish charity for their own shortcomings.'[1] This and the subsequent passages upon the interpretation of Plato as though he were a modern idealist show the maturity of his mind at this date. His teaching was indeed most excellent where he generalized in regard to error, showing that a given mistake belonged to a type, which he then characterized decisively. He constantly reminded his pupils of what he cruelly turns upon his antagonist in this passage of arms,

[1] The *Classical Review*, vol. III, No. 3, p. 119 seq.

a saying in the *Parmenides*: 'you are still young: the time will come when philosophy will have a firmer grasp of you, if I am not mistaken,' and he made them seek the general fallacy underlying a particular dogma or an apparently novel heresy. Thus in regard to the Megarian problem called the 'Liar', he would maintain that the puzzle about the truthfulness of Epimenides relies for its effect upon the erroneous notion that a judgement can make a statement about its own truth or falsity. This he then grimly developed in order, as he hoped, to destroy the coherence theory [1] of the nature of Truth.

Wilson only reluctantly learned the lesson that the parties to a controversy rarely succeed in convincing any one but themselves. He did not fear controversy; on the other hand, it disturbed him; he did not enjoy it dispassionately as Matthew Arnold would. Neither did he ever lose his love of victory. He says frankly in a letter, 'I can talk or discuss better with one, if there are more, the desire to win a victory disturbs me.' [2] This made him appear cross and irascible to some who did not know him, just as his self-confidence provoked, if it failed to amuse, more modest minds He was on the point later of becoming drawn into an attack on a much younger man, James Adam. He resented an improper reference, as it seemed, to Monro in that lamented scholar's essay on *Plato's Nuptial Number*.[3] He wished to put him publicly in his place. Fortunately the matter was ended and Adam later consulted him on a mathematical question in the *Republic* [4] The old warrior formed a friendship with his junior, and Adam, with characteristic modesty, enriched a valuable edition with the fruit of Wilson's special learning This change of attitude was in keeping with all we know of Wilson. Once you had his friendship, he would see all the good in your work and help you lavishly to the better. But you had to defer to him and his prejudices. Only provoke him by opposition and he would, perhaps for a season, perhaps for ever, see you and your work from an angle and, what is more, discover moral turpitude in mere intellectual

[1] As in Mr H H Joachim's *The Nature of Truth*, 1906. Cf Logic Lectures, § 240; Philosophical Letters, Part V, xiii

[2] Cf J C W. to B B, 7 and 18 VII 03, infra pp 729 and 740

[3] *The Nuptial Number of Plato*, J Adam (London), 1891, p. 9, note 1.

[4] Vide *Testimonia*, infra, p. lxxiii.

obscurity. This side of his nature may be traced not unfancifully to his father, also a fierce controversialist, and to an inherited nonconformity. Alexander Kilham, the founder of the schism from the Wesleyans to which Mr. James Wilson belonged, is said to have exhibited in his writings an undue proportion of invective and to have injured his cause 'by an occasional virulence of aspersion that was not in harmony with his general character'. The same is true of Wilson. He was the most lovable of friends, but some strain in him, a certain ignorance of the world, the undue solitude of his early manhood, an inherited pugnacity, made him a dangerous and sometimes, I think, an unscrupulous antagonist Scholars, whose studies involve the patient, often unrewarded, search for truth, will forgive Wilson his zeal in causes he deemed sacred. He is an extreme example of the schoolman's tendency to see things too close.

He was the same in all he undertook. A mathematician who intended philosophy, he was diverted into the fascinating paths of scholarship. Mathematics, he said himself, are the best preparation for logic, he found in them a discipline and, in later years, a recreation Yet he appears to have been, as mathematicians judge, no more than a competent mathematician. 'He would have made his mark, if he had made mathematics his speciality,'[1] says the friend, who yet tried to dissuade him from the costly labour of his one mathematical treatise, his παίγνιων γήρως, *On the Traversing of Geometrical Figures.* 'With his many-sided interests he hardly gave sufficient time and thought to the subject to make himself really conversant with the modern aspects of the underlying problems.'[2] This judgement of Dr. Hobson is the opinion also of those best able to speak in Oxford. It would be strange if it had been otherwise. But he could not shut his ears to the sirens' song and thus my table is strewn with the wreckage of his many ventures in those delusive waters. Quite a late packet of manuscript 'On continuity and change' is endorsed 'This discussion written 1905–6 (apparently) must be entirely revised I am not sure that what is said of direction of a curve of a point is sound. J. C W. 1911.' The

[1] J W. S to H W B J, 25 xi 16.
[2] E. W. H. to H W. B. J., 2.vi.16.

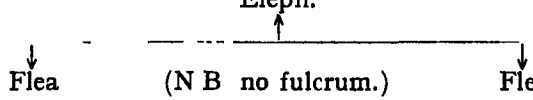
latter subject might well occupy a philosopher; but much of his work, often endorsed in some such way, belongs to those by-paths of the human intellect of which Lewis Carroll[1] has said: 'This field of mathematical research, with all its wealth of hidden treasure, is all too apt to yield nothing to our research; for it is haunted by certain *ignes fatui*—delusive phantoms that float before us and seem so fair and are all but in our grasp. . . . Alas for him who has been turned aside by one of these spectres, who has found a music in its mocking laughter and who wastes his life and energy in the desperate chase.' The words were self-critical, but might well have referred to Wilson. The snare which besets the man of science is to put aside problems pertinent to his studies, feeling the time not yet ripe to attack them; so he forgets them and grows narrow-minded; the philosopher's temptation is to overrate his powers; to take all time and all existence for his own, and the sands of life are run out before he has well begun.

Writing what he calls an *apologia pro vita mea*,[2] Wilson says: 'You know that mathematicians in our day believe in the possibility of constructing a new kind of space or spaces. That is to my mind the mere illusion of specialists, who can't understand philosophy or metaphysics and are cocksure they do. I long to destroy the abortion I think it possible to do this in a way which would convince metaphysicians. But to kill the thing one must convince mathematicians in the only way in which they are pervious, i.e. show it ends in a *mathematical* contradiction. . . . Remember I don't mean that the refutation of it depends on such a discovery—it can be refuted without. But it would be convincing to *mathematicians*, if one could find it. . . . If one could prove that it (the original absurdity) led to the contradictory of 2 sides of a triangle are greater than a 3rd, one would have done the trick. Now I have continually thought that I had discovered the required contradiction and

[1] The late Rev C L Dodgson, Senior Student of Christ Church The quotation is from *A new theory of Parallels*, by C L. Dodgson, 1890, p xvi.

[2] J. C W. to S C P., 13 v.01 Cf (same letter) 'I may say without vanity that I do a quantity of hard thinking about puzzles and you will easily understand that this cannot show bulky results. But it is a far greater satisfaction to me to solve puzzles and do something which in this way will last'

then found myself wrong. It 's noted as a treacherous subject. But the fascination is tremendous and when it 's on me I work almost night and day. I have really, when the thing seemed coming out, *thought* through a whole night till the break of day and later! I can only compare myself to Bernard Palissy the potter, who finally burnt the very floor of his house for the discovery of his famous enamel If I succeed it will be admitted⟨ly⟩ worth the time spent. And of course I may not. However, the process has caused me to produce a number of theorems in this pseudo-geometry—some already known, but mathematicians tell me my methods are original and I believe they have the advantage of simplicity. So that if I must finally give up the " quest ", I may in undertaking the philosophical refutation have the advantage of proving myself *not* an outsider in the mathematical department, for of course the mathematicians like to say the philosophers who disagree with them don't understand the mathematics They won't be able to say that of me. I have however had a certain important success It seemed to me one could develop some startling paradoxes, if one applied such geometry to force and motion I constructed a system of statics on the basis of this pseudo-space and proved among other things [that] in such space that two fleas could pull an elephant with ease provided they were pulling at two ends of a bar and he at the middle, if the bar was made long enough, thus ! !—



One of the most distinguished of our mathematicians (an F.R.S.) present at the meeting of the Math:[1] Society here, in which I showed this, said at the end that I had shown that either this kind of space must be abandoned or the current conception of force must be changed, and he gave it as his opinion that it was probably not the conception of force which would be changed. . . Meanwhile I have had another attack of the subject, it seizes me off and on like a fever and for several weeks—because I found a new track—it has however ended in nothing and I am making myself put it aside in order to finish

my ἐπαγωγή. On the whole this " quest "[1] it is that has hindered me most and you will feel that, I think (*sic*), if it succeeded, it would be a far more valuable thing than the other matters on which I am working : and *if* it was once done, I could simply, as I imagine, reel off the other things '

Thus we have little but the memory of Wilson's *obiter dicta* to oppose to the development of symbolic logic, which has gone so far beyond the point at which he was assailing it ; a development perhaps the most interesting of all modern science to the philosopher ; for it is, or pretends to be, a branch of logic and runs quite counter to the philosophy of mathematics which Wilson taught and even to his theory of knowledge. For, in its essence, it appears to be the mind dictating terms to reality and it suggests what is indeed a *meta*physical world. Wilson treated Mr. Russell and the like almost contemptuously ; he employed common sense and his dialectical skill to overthrow their theories and the victory was, as such victories tend to be, a vain one The two armies moved perpetually round each other's flank Wilson knew where the weakness but not where the strength of the enemy lay ; he worked at these subjects fitfully, however vehemently, and in the end there is little to give to the world I have printed two public lectures,[2] dealing with Boole and Venn and implicitly with some sides of the modern doctrine They are sufficient to show Wilson's line of attack and the brilliant way in which he handled the topic. There comes a stage in every thinker's history when he is no longer open to conviction by the force of his adversary's objections This came very soon to Wilson even in philosophy, and his doctrine of reality, for example, will be seen to be a statement of his own convictions rather than a strictly positive proof of what he held.

In 1892–4 he conducted a long debate by correspondence with the author of *Alice through the Looking-glass* on this subject, and indeed the letters might almost have been extracted from that book. Carroll's view and method will be found in his *Symbolic Logic, Part I*,[3] a little book that can be mastered in a week.

[1] Alluding to Plato, *Ap* 22 A and 23 B [2] Logic Lectures, §§ 371–400

[3] *Symbolic Logic, Part I*[3], by Lewis Carroll, 1896 The extracts are from part of a correspondence, dated from 11 xi 92 to Christmas Eve 92. Wilson's

His limitations are easy to see but to resolve his difficulties is quite a serious task. Wilson was led away into an attempt to show that he could do this kind of thing just as well or better than Carroll, and he found his antagonist too much for him. The correspondence flows on with an easy persistency and provoking elusiveness on the one side; on the other with a growing, rather dogmatic irritability. Carroll, while asking for symbolism, insists on concrete instances, and many of the letters turn round a problem concerning the 'walking out of six married couples', certain conditions limiting the combinations. The thing is purely mathematical, as Wilson saw, but underneath Carroll is trying to resolve a difficulty he felt in hypothetical thinking. He asks, for instance, for the logic of the true statement: 'If I were to run to London in ten minutes, you would be very much surprised.' The nature of the letters may be gathered from the following extracts·

CARROLL. 'I should be much interested to hear which, if any, of these problems you think soluble by ordinary methods or by any existing methods'

WILSON. 'Some problems quite wrong and remainder soluble by ordinary methods I knew *a priori*, before looking at your questions, that the ordinary methods must suffice, if the arguments were sound because . . . the figures of the syllogism are complete for the purpose'

CARROLL. 'PECCAVI.' (A week later) 'At last I have spotted the fallacy . . You made an assumption you have no right to make: viz., that two contradictories are true at once.' The note on this letter is 'This is a curious mistake of Dodgson's.'

CARROLL. 'I am charmed with your letter just received and regard it as a real "feather in my cap" that I have caught the Professor tripping So you would really have the courage to assert that the two Rules. (i) When I go out, I wear my hat· (ii) When I stay in, I do not wear my hat· are "contradictory". Yet may I venture to assure you that I own an unbroken allegiance to both and never disobey either of them. The note on this is: 'an extraordinary illusion of Dodgson, he has made an elementary mistake.'

letters were preserved by Dodgson and may be seen in the Christ Church Library.

CARROLL. 'I think you are a little hard on me, in our discussion. For, whereas I read all you send me, you decline to examine arguments of mine, on the ground that, being already convinced that your theories are sound, it is superfluous to examine any argument which is alleged to disprove them. This puts me at a disadvantage and rather reminds me (if I may venture to draw such a parallel) of the jury who, having heard the evidence against the prisoner, told the Judge they were convinced of his guilt and that it would be superfluous to hear any evidence in his favour. Would you mind, just for once, reading a few remarks on the two rules which you and your friend [1] assert to be contradictory?'

One outcome of the long duel fought in this way between the two principals, and involving more than one second on Wilson's side, from November 1892, till the summer of 1894, was Dodgson's delicious article in *Mind* called 'A logical paradox'.[2]

I might cite other instances to show how wide and scattered his interest and his labours tended to be Thus he lacked the breadth and comprehension, the sense of proportion, of greater scholars and thinkers. There is a certain narrow intensity in his work and, if it is not too fanciful, he may often be compared to a boy working at his sums, absorbed in relatively small problems. His method of work in philosophy was the same. He was not an industrious reader, he hardly knew modern or contemporary writings and he used Prantl's and Ueberweg's histories freely. If he had occasion to treat some thinker he was of course too good a scholar not to go direct, at least to the opening of that author's works 'I treated you', he writes, 'as I do any philosopher whom I happen to be reading. After reading about a couple of pages of your paper, I saw what your point and what your difficulty was. I then put it aside until I should have thought out my own account of the matter clearly, after which I should again take up the paper and read the

[1] The late Rev W. Warner, Senior Student of Christ Church, one of Wilson's earliest private pupils Warner read with him for *Lit. Hum* at Malvern.

[2] *Mind*, N S, vol iii, No 11 The subject was resumed by Miss Jones in *Mind*, N. S, No. 53 The article by Wilson (signed W) is in No. 54 Wilson did not keep his MS. but the evidence of style is conclusive and he referred to an article of his in *Mind* at this date in a letter See p cxix

sequel. I think this the best plan anyhow, when one is energetic enough, though it may sometimes take one a long way beyond the immediate question one finds actually proposed (though this hardly happened in the present case): and it suited me best this time because the points you raise have been before me for some time and I have been feeling the necessity of reconsidering them and rewriting this part of my lectures.'[1] Thus he read and conversed rather with a view to his own difficulties than to yours and rarely gained a sympathetic insight into the author he was studying. Moreover, his own mind was not creative and his severe method of inquiry took the form of using as a fulcrum for himself the position reached by others. He was eminently a critic, constructive if at all only by dint of instinctive previous negation In familiar talk you found that your mind was his whetstone and written work he put to the same use. His treatment of Mr. F. H Bradley is most easily explained in this way. It began in its present form in talks in the 'Long' of 1901, spent with me in North Yorkshire, and Wilson after his manner carried his criticism too far. Yet the very intensity of the onset shows his respect for the enemy, he treats him after all as he does Aristotle and Kant, where he supposes them to be wrong, and he has written in red ink on the manuscript the famous apology of Aristotle to his master. 'Where both were friends, it was a duty to put Truth first'[2] Bywater, associating his name with his text of the *Nicomachean Ethics*, has called him pre-eminently an Aristotelian[3] (a man most full of Aristotle), and Monro is said to have 'ranked him among the first Greek scholars of his time',[4] Susemihl, from a distance and with equal justice, taxes him with undue subtlety.[5] Certainly his industry was at times that of the spider rather than the bee. Thus he reminds one in all his work of a seventeenth-century

[1] Letter to H A P, 18 xii 06

[2] *ἀμφοῖν γὰρ ὄντοιν φίλοιν ὅσιον πρωτιμᾶν τὴν ἀλήθειαν* *Eth Nic* 1096[a] 16

[3] 'Virum dico si quis alius 'Αριστοτελικώτατον, I. C. Wilson', preface to *Aristotelis Ethica Nicomachea*, Oxford, 1890 An allusion no doubt to Winstanley's use of the same epithet of J Harris in *Aristotelis de Poetica Liber*, Oxford, 1780

[4] S. B. *Oriel Record*, l c

[5] 'Nimia subtilitas' He calls Wilson 'vir acutissimus' in *Aristotelis Politica*[2] (Teubner), 1882, p xxi, and 'in criticis operationibus vir validissimus', ib., p. xxvi, with a spice of irony.

scholar, in form and in a certain mercilessness; and their spleen and prolixity are only tolerable in the greatest. His sad unfinished work is in melancholy contrast to his friend Bywater's Erasmian urbanity, concentration and perfect finish. These characters of imperfection and incompleteness are impressed on his logical remains also. There was indeed the excuse of age and failing strength, distraction and lack of time, but the evil was more deep-seated than any remedy could meet and arose in part from an intellectual vanity in striking contrast with the simplest and sweetest of moral natures. I think he knew in his heart that desire for glory alloyed his love of truth; he faced indeed his love of victory but he was for a philosopher too much interested in fame. The passion grew upon him to be original in his work. He would at least satisfy himself that what he discovered he had found for himself This made him so hard on what he imagined to be dishonesty in lesser scholars; not, I think, the pure love of truth. He would choose rather 'a flower of his own getting than much better gathered to his hand'. So he required to be directed upon problems which were incomplete, and refused to be governed in his investigations by results already secure. Workers in the same vineyard, except personal friends, he regarded with instinctive, almost childish, rivalry. He was at no pains to acquaint himself sufficiently with the work of his contemporaries, forgot that a living study progresses only by the tentative and common development of questions that at the moment invite and engross men's attention. He never told Mr. Bradley, working in the same city, the errors he detected in his work. Thus he neglected that 'contribution of arts the one to help another, that variety of particulars for the correcting of customary conceits'. These faults, for they are faults, helped perhaps to make him the great teacher he undoubtedly was. 'Rarely has a professor been such a teaching power in the University or exercised such an ascendancy in its philosophical studies. He was not only a teacher of other teachers' pupils, but a teacher of teachers themselves'[1] In the last years of his life I have been told that on more than one occasion, at the close of his last lecture in the summer term, the whole class stood and gave the venerable little figure an

[1] S. B., l.c.

ovation. This, so far as I am aware, is unique in Oxford, where, except at public lectures, applause is forbidden by convention and your audience effectively conceals any approval or disapproval it may entertain.

His chief recreations in middle age were hockey, volunteering, and the war game. He was a keen hockey player, being with the late Master of Balliol one of the dons who shocked Pater's delicate nerves, when he lighted upon their combats in the Meadows He had resigned when I joined the War-game Club, so that I cannot speak at first hand of his skill and ardour. Mr. Spenser Wilkinson was the founder, Sir Charles Oman, H. B. George, and W. Sanday constant devotees. The last named was reputed a Marat in his handling of cavalry, in odd contrast with his gentle voice and manner and his *benevolentia theologica*. He was evidently a born fighter, however. Wilson once wrote: 'Some years ago I published a series of criticisms of his fussy emendations of Aristotle I showed up the lot, I remember to the great joy of Sanday who "can never have enough of fighting" and sent me a congratulatory postcard on having demolished the supposed Cambridge authority on his own chosen field—"all along the line", I think he said.'[1] Of Wilson the story went that he lost a campaign by delay in one of the enemy's towns When asked by the umpire what he was doing all those precious hours, he replied. 'Sacking it, of course, and putting the women and children to the sword.' This recreation did not lead him into any wide reading of military history; he worked, as his manner elsewhere was, exhaustively at each problem and to such good effect that he was the first amateur in Oxford, to my knowledge, who realized the ability of Lord French's earlier operations in South Africa. His study of the war game and his volunteer service were sides of his strong and native love of country. His feeling for England may be traced here and there in his papers. A logic lecture is dated by a marginal note, in Latin, 'I write this two days after the news of our lamentable disaster in Africa'.[2]

[1] J. C W to A S L F, 10 v 12 The articles in the *Academy*, 'Recent emendations, &c', are directed against suggestions made by the late Professor Henry Jackson, O M.

[2] 'Haec scribebam tertio die post nuntiatam miserrimam in Africa nostram cladem', viz the battle of Isandhlwana, 22.1.79.

His simplicity and his share in the volunteer movement in Oxford are brilliantly satirized in the ballad published in the year of his *Timaeus* campaign.

'Shtand oop, yoong man,' der Kochmann gried, und blaced him on his feet,
'By vay of ransom you moost schvear—my ladest vork to readt,
If *ve* ish daken brisoners, id dakes moosh geld to free us,
I *gifs* to you mein liddle book, dot treats of de *Timaeus*.'

The undergraduate world was aware of the controversy and rejoiced as young men will One day in camp Wilson commanded the combined Cambridge and Oxford cyclists and was ordered to attack the infantry battalions. The verdict of the umpire was adverse and, on returning to his own lines, Wilson explained how the reverse was due to a blunder of his Cambridge subaltern. 'Does any one know the name of the *fellow*,' he asked, with something of Mr. Pickwick's stress on the last word There was a pause and then a scholar of Corpus took two paces forward, saluted and said 'I think the name was Archer-Hind, Sir,' and so fell back smartly to the ranks. Wilson worked hard at his qualifying courses and at Musketry, mastered the War Office manuals and a small but excellent book on Minor Tactics,[1] and practised conscientiously Military Map-drawing. Once a week for the whole afternoon he would take his cyclists instructional rides in Road and Village Reconnaissance, diversifying the route both ways by 'developing' minor tactical problems, suited to cyclist advanced and rear guards, in our behoof. Probably we knew the track past Chilswell Farm and all the scenery of *Thyrsis* as well as the poet himself, and there are few villages round Oxford that we omitted He printed one of the first, if not the first, manuals of Cyclist drill and another small pamphlet on Reconnaissance for his men, and parts of the drill were adopted by the authorities. A brother officer[2] thus appreciates him: 'The points in his character which first impressed

[1] Wilkinson Shaw's *The Elements of Modern Tactics* (Ed xi 1900)

[2] Major F A Dixey, D M , F R S , T D., Fellow, Bursar and Sub-Warden of Wadham, Curator of the Hope Collections. I think our old Volunteer battalion mess would give the palm to Wilson's work for the O U V. and its successor the Contingent of the O T C Great nevertheless is the debt to Dr Dixey and his contemporaries and to the many regular officers, active and retired, who commanded, were Adjutants or Company officers of, the battalion.

me were his single-mindedness, his strict conception of duty and his clearness of vision, carried out with practical promptitude of action. He was tenacious of purpose, thorough in everything he undertook, a master of technical detail. As I came to know him better, I learned to appreciate more and more the unselfish zeal with which he strove for the highest efficiency in himself and in those under his command, and his worth as a loyal and stimulating comrade His views were clear-cut and his decisions prompt. This quality came out not only in military matters but also in general conversation, which often took the form of friendly controversy On these occasions he was not content with forming, or even with expressing, his own opinion, but he would manifest an eager desire to drive it home in the minds of others. . . It must be confessed that in pressing his point he was apt to lose the sense of proportion and measure . . . and the earnestness with which he would urge the importance of right views on these and like subjects had for some of his hearers an effect which was really amusing . . . But the respect and affection so widely felt for Wilson were such as can only be inspired by a nature at once strong, thoroughgoing, simple and sincere' There is Wilson the man and soldier to the life On parade he was very strict in essentials, as the little boy at Derby found him; he knew his drill perfectly but had a poor word of command. In the field, he tended to magnify a skirmish into an action, loved guerrilla methods rather than the ordered discipline of regular combat. On a small scale indeed he was singularly like the remarkable Confederate leader in whose genius the professor and the professional soldier so oddly blended. He would have been as fearless, morally and physically, as Stonewall Jackson in actual battle. He had the aggressive and supremely self-confident nature, great endurance and activity of mind and body, and demanded the last ounce from his men With a noticeable slimness in manœuvre he would cheat when he could. When remonstrated with for recklessly exposing himself, he broke out: 'Don't be a fool; can't you see, I *want* the umpire to see me.' I think he proved that very considerable military ability may be developed in the unprofessional soldier, given certain native qualities, the study of principles and constant and precise care in resolving problems set on the ground

and controlled by trained officers. At the time of the war in South Africa, the boys in the street saluted him as 'Cronje'[1] and by this sobriquet he became known to famous soldiers. That Cronje was also professor of Logic was a puzzle the regular soldier's mind refused to solve. On an occasion at Aldershot, Lord French, whom Wilson much admired, visited the camp. Wilson had seriously hurt his knee by coming off his machine, in the most reckless descent of a hill I have ever seen a man of fifty attempt, and could not take the field. Lord French, after the inspection, said suddenly 'I must see Cronje' and turned with his staff officer down the officers' lines. Wilson was seated in his tent, not fully dressed, but he came out, like Socrates on a famous occasion, and was soon deep in talk with the general, without a trace of self-consciousness. He frequently commanded in what used to be called 'sham fights'. This he much enjoyed, and left no stone unturned to win. Writing to a brother philosopher[2] he throws in these remarks at the end of a long letter: 'One thing I am looking forward to as facilitating my work is giving up volunteering. I shall have completed 20 years of it. I delight in it because I am so fond of tactics, but it doesn't simply take the place of ordinary exercise. I find it involves a good deal of energy, because I have to think and arrange, being in a responsible position. Moreover I have so often to command on Field days, and as it is no good doing it unless it is done thoroughly I go over the ground carefully and take the officers, who are to serve under me, over it afterwards—that may mean several afternoons. Besides it excites me greatly, which wouldn't matter so much if it wasn't in term. In this way I lost *all* last week as far as private study goes I think, however, I gave the officers a very interesting time. We had to defend against the town and yeomanry, they *two* maxims and we only *one*, both sides cyclists but we no yeomanry I am generally made to attack in our wars, and having to defend I thought I would show an example of an aggressive defence, giving the enemy no comfort. We succeeded on the problem given us entirely and captured one of his guns, while I succeeded in keeping the other from ever

[1] Some boys with less understanding shouted 'Kroojer'

[2] B. B ; the remainder of the letter is given in Part V.

getting into a fair position. I like this in the *vacation* especially at Aldershot, where last camp I was presented by the Colonel with a *cucumber* as field marshal's staff in consequence of a successful command. You will comprehend the fascination of tactics anyhow. Last year, or rather longer ago, we defeated Cambridge here (on *our* ground however) and by using a wood I kept back and neutralized about half a battalion of their infantry with about 25 of my cyclists (as the umpire afterwards informed me). I used to think this was mere recreation but the more responsible the work the more I find it is not so: it is urgently necessary I think to give up and I have got over the pang, especially as I leave the cyclists in charge of —— * * * * *. I can turn out with the corps I daresay sometimes, but it will make all the difference that I have no responsibility for training and efficiency. I gave up *Kriegspiel* long ago, it was too exciting. Well, now I am starting to "face the music".'

Here, in his own words, are his love of victory, his passion for a problem, as well as his indefatigability There was a kind of restlessness in his intellect which made his thought not merely discursive but sometimes wandering; he was rarely content as are most men in their maturity with doing a thing well, he coveted the prize of recognition. The phrase 'as the umpire afterwards informed me' betrays the writer.

Time would fail to tell all that I might of his exploits in this mimic warfare, of how his cyclists were on the point of surprising a line of outposts, when their position was revealed 'by the old man's beard sticking up out of a drain pipe'; of the occasion when, late in an afternoon, after a turning movement outside the prescribed bounds of manœuvre and even off the Aldershot map, Wilson suddenly opened rapid fire upon the battalion standing at ease after the day's fighting. Similar incidents will no doubt occur to all who have been familiar with operations carried out with the ambition and the spirit of the amateur tactician. Suffice it to say that he did a great work for volunteering in Oxford, not only by begging from Dean Liddell, in the vacation when the governing body was away, the use of the Meadows for drill, and by collecting subscriptions, but by his example, his contempt for ridicule, his serious study, and by twenty years of teaching his subordinates. It was Wilson

who did most to foster the enthusiasm and knowledge which later made the Officers Training Corps a success in Oxford.[1] He was as happy as a lark at Aldershot, very pleasant in the mess, never felt by his juniors to be censorious and, on an occasional guest night, he could be a boy with the best. He had a natural regard for the best type of soldier, did not import his dialectical skill into his conversation with them, never fell into the easy temptation of suggesting, as the clever amateur sometimes will, an over-confident belief in his intellectual superiority. His military life is of a piece with the rest. He chose a recreation which was not an intellectual refreshment, and was never rested except perhaps in body. Only a very strong physique could have stood all that he asked of himself. A contemporary at Balliol,[2] who could not be accused of indolence, once replied to a question as to Wilson's undergraduate days, 'I only remember that he worked painfully hard'. So it was all his life. He would have worn himself out very much sooner, if he had not had so sound a constitution When he stripped you were surprised by the mould of his frame—an excellent chest and all the body well proportioned. He had a good appetite and heartily enjoyed the scent and flavour of simple dishes His heart was very strong, he was very active, even nimble, and he had great nerve He told me once, when we were clambering in the clerestory of Beverley Minster, that he used to fear looking down from a height 'I determined to and did overcome it by use, and I have since been about freely on the roof of Cologne Cathedral and never felt a qualm.' He was however a wretched sailor and this may account for his

[1] The Corps was launched in Oxford by a public meeting which Sir Herbert Warren, K C V O, Hon D C L, President of Magdalen, the then Vice-Chancellor, General Sir Ian Hamilton and Viscount Haldane, O M, addressed Lord Haldane told me that on this occasion Wilson said to him, 'Don't let us talk of the new Realism, I am thinking only of the organization of armies' The introduction to the *Oxford University Roll of Service*, p ix, does unconscious injustice to the 'body of eccentrics', who preceded the O U O T C The volunteers in Oxford were much more than this and during the Boer War upwards of 800 served in camp in two successive years The numbers in the O T C. were increased in 1913 largely through the remarkable devotion to duty and the unique personal magnetism of the late Brig.-Gen R C Maclachlan, Rifle Bde. He was first Adjutant and then O C the Contingent He fell in action

[2] The late Sir Thomas Raleigh, K.C S I., afterwards Fellow of All Souls.

original dizziness. He would have been a good athlete had not his sight been defective and his interests elsewhere. He was astigmatic and when looking at pictures, if he forgot his glasses, would correct the failing by an optical artifice of his own. He had indeed a variety of devices which diversified life for him and were allied to his love for physics. I am sure he was more keen on the mechanical toys he gave to children than they themselves were. This was especially so when the gyroscope became common. He loved puzzles, and above all the joy of discovering the answer for himself, and this led him away into those tempting inquiries which wasted too much of his time and diverted his energies from his proper tasks. He invented or recalled from boyish days a curious device producing a stereoscopic effect and wanted to get it patented as a Christmas toy. I wrote to a friend, an optician, who replied courteously saying he knew the principle and suggesting a practicable line in the matter. Wilson was quite angry, said the man had missed the real point, and soon after appeared to have forgotten the idea that was to have made his fortune.

What then was the private life of this man, so reckless and restless in work and recreation? He was certainly a most lovable friend to his younger contemporaries. Like many great teachers, he found himself most easily in the company of his juniors. He succeeded in discharging the balance of years and, in the country especially, he made you feel as if he and you were undergraduates together. In fact he only became young when he began to grow old in years. One of his juniors puts this very well: 'He was a delightful holiday companion and a careful, enthusiastic and energetic guide to good scenery and to other good things as well. At times he would show a most boyish vigour; walk, climb and run with the best; at the age of sixty he bathed, on a sudden impulse, in an ice-cold tarn on the snow level in Switzerland, and he could be on his legs for hours with a total disregard for food.'[1] He had a capacity unusual in clever men and one you would hardly have expected from so contentious and quarrelsome a writer, the power of listening quietly to anything you had to say upon subjects in which he was interested but not proficient. This is true especially

[1] C. W. B to H. A. P., 1 v 19. Quoted also in *Mind*, l.c.

of music and the fine arts. In our visit to Beverley it was a delight to see him absorbed in the beauty of the churches, with all the fresh enthusiasm of a schoolboy. So in regard to music; he would constantly come to our house to hear the pianoforte and would sit buried in the sounds. Staying with us in the country, just after his father's death, he looked up at the end of Beethoven's A flat sonata and with reference to the funeral march[1] said. 'That is the utterance of a man who had realized that death is a definite good: it is the expression of a master's conviction.' He was quite other where his scholar's vanity was interested. Unless you happened on something that chimed with his opinion or suggested a new side to a problem, he was curiously intolerant of difference On the other hand, if you consulted him as a superior, solicited his advice, he would lavish endless pains in enlightening you, regardless of his own employment, and was seriously troubled if you were unconvinced He was like a religious man trying to secure a convert He admired the classical poetry of which Virgil is the great exemplar and would occasionally (as when I told him we were off to the Italian lakes) burst into lines like:

'Anne lacus tantos? te, Lari maxime, teque,
fluctibus et fremitu adsurgens, Benace, marino.'

These he recited *ore rotundo* and with a gust like that with which he would enjoy a salad Drama and romance he would have formally correct, and expressive, in matter, of the normal moral outlook. In the graphic arts he admired the delicacy and minute precision of line engraving and old mezzotint (he esteemed Lalanne, for instance, highly), and, except where nature was concerned, enjoyed the more formal and detailed schools of painting. He was a lover of the Flemish and Dutch painters ever since a vacation tour in 1892 with C. L Shadwell in the Low Countries. Bach and Beethoven were his favourite composers and, as his own thought appeared not seldom to 'find no end in wandering mazes lost', so he delighted to forget and find himself in the familiar yet ever fresh, the inexhaustible yet defined wanderings of music. Whatever may be the verdict on his central philosophic tenet, he was certainly most objective

[1] Op. 26. 'Sulla morte d'un eroe'.

in his enjoyment of beauty, allowing the reality of artist's vision or of nature's pageantry to speak direct, never throwing a veil of sentiment or melancholy emotion over what he saw or heard. He enjoyed the sounds and smells and tastes and sights of his world, disliked suggestiveness, occasional writing, exotic flavours, anything like what is called impressionism. He would come in to a concert and sit by one and follow the score. He kept his place by counting the time on his fingers, as he was not a practised reader. Rarely he played a little himself and once gave us a rendering of the first movement from a Dussek sonatina.[1] His time, which he had found difficult at ten, was now perfect, his touch rather staccato; he was as excited as a child over it and like a child thoroughly enjoyed his little performance Whatever he did he never suffered from that kind of nerve-exhaustion which brings in its train depression and self-depreciation. In connexion with music I saw him for the first and only time in company with his father. I was sitting in the gallery of the Town Hall, when my attention was attracted by a tap on my shoulder. There was Wilson behind me and by his side stood an even smaller man, with a longer and more silvery beard. The older man's mind was clearly failing, but his son had hopes that the Joachim Quartet would give him pleasure He hardly spoke but sat very quiet and patient through the music and nothing could have been tenderer than his son's bearing towards him. As they went out together, the younger supporting the elder, I was irresistibly reminded of that scene in the Roman Imperial senate which is said to have earned for Antoninus his cognomen Pius.

This innate reverence, this *pietas* which appears even in his boyhood letters, found satisfaction in a deep love and admiration for his parents,[2] whom he induced to remove from Clanfield and settled for their declining years at Islip, and in an engrossing devotion to his wife She was a Hanoverian lady, Charlotte, daughter of Amtmann a. d. Schneider, of Gifhorn in the province of Hannover, and educated in the Lüneberger Heide. Neither

[1] Op. 20, No 1.

[2] Dr. C L Shadwell, late Provost of Oriel, wrote to J C. W. of 'the happy contentment which seemed to attend the last years of her life', when Mrs J. Wilson died in 1902.

she nor her husband had any illusions as to the ultimate aim of the Prussian monarchy. One at least of her brothers had fought in the Hanoverian army in the Six Weeks' War. When war broke out in 1914, Wilson tried to get his wife's nieces, who were (except his son in South Africa) his only relatives, to come and live with him in Oxford. At the same time he was writing to beg me to inform any person of influence I could approach that he was convinced that the only way to secure decent treatment for our men imprisoned in Germany was to 'have out German prisoners of high rank and, after due notice given, to hang them in cold blood' unless the outrages ceased.

His married home was first at No. 26 Winchester Road; later he removed to 12 Fyfield Road, a simple and peaceful house where he worked in a study opening out of the drawing-room, the two rooms being heated by a German stove. The study led to the garden and looked east to Elsfield. His books were few, the room always tidy, the furniture severe and good. Over the mantelpiece was an original landscape by van de Velde and on the shelf a portrait of the elegant and handsome Lotze. In this quiet privacy Mrs Wilson and he entertained their friends, principally to Sunday midday dinner, and a very pleasant host and hostess they were. She insisted on his brushing up for these occasions and in his fine blue double-breasted frockcoat he looked like an old officer of the Crimean days, carrying himself erect and enjoying the good things of the table The conversation was homely and easy, the Wilsons delighting to bring together in this simple way acquaintances of theirs, young and old, some of whom were perhaps not too much befriended in Oxford. It might have been the table of a professional man or pastor in a quiet provincial town, so simple yet generous was the fare, so homely and unpretentious the appointments The waiting was assisted by a very small boy in page's buttons and the control of a succession of such pages exercised Mrs. Wilson very much. Her friends in Oxford were amused and sometimes fatigued by her perpetual pre-occupation with the tenant of this office, whom she would always refer to as 'ze boy'.

Mrs. Wilson's health was, after the birth of their only child, gravely affected until her death in January 1914. She was

indeed almost a chronic invalid. 'This threw upon him a burden of daily nursing and household duty which he shouldered with an unvarying fortitude and patience.'[1] She was a simple creature, with a remarkable fondness for and understanding of children and animals; she had plenty of shrewd common sense, and among her husband's older papers are traces of an attempt on her part to help him as an amanuensis. But she had not the kind of mind to be of assistance to him in his work; in fact, though she admired him for his position, she had no sympathy with his labours. She had a letter of his in her hand when I called one day and, supposing it to concern a philosophical subject, said: 'I am so glad, John has written to say that he has finished his dull book.' She was heartily amused when the word 'dull' was amended to 'drill'. Her illness made her hysterical and I have known her husband sit with her, during one of their holidays, for hours together, on the stairs of the house, holding her hand to soothe her, on a heavy day when thunder was in the air. And so it was in many of the smaller troubles, physical and moral, of their life. He would be sharp and even cross with her occasional banalities, his intellect predominating, but he really suffered with her in all her many ailments, spent hours in the Bodleian reading up medical treatises on her presumed illness and, when she was dying, he seemed to suffer an anguish more than mortal. At her funeral,[2] which started from the chapel at New College, his stony grief was most pathetic, and his devotion to her in life and death must have made many of his friends feel that this strong passion justified what had often seemed to them the intolerable waste of time spent by the professor in running small domestic errands and in listening to the daily tale of petty difficulties and grievances which most married men are content to leave in happy ignorance to their wives.

Like many other intellectual men, like his friend Lewis Carroll, he was very fond of children and played with them on all fours

[1] H. W. B. J., 1c

[2] Wilson wrote an account of this sad event for a German newspaper. The article speaks of 'a beauty and stateliness which even in beautiful and stately Oxford have seldom characterized a private funeral . . to the accompaniment of beautiful and touching music the famed New College choir sang the two lovely hymns "Jesu, Lover of my soul" (Wesley) and "God moves in a mysterious way", that noble poem by Cowper'.

like a big dog. He never forgot them at Christmas and would go the round of Oxford with valentines for his many child friends Here are two valentines and an Easter poem, of 1908 and 1909·

'But Jane, my dear,
This is leap year,
Why aren't you courting me?
But p'r'aps it means
That little queens
Are served on bended knee,
And court to them and not by them must ever rendered be.'

'If Valentine day 's Sunday,
Whatever can we do?
Hug Saturday or Monday?
Well I don't know, do you?
For Saturday 's too soon
And Monday 's much too late
Says Jane, "Oh how you moon,
Professor Addlepate!
Both Saturday and Monday
Belong to Valentine;
I hope, Professor, one day
Your wits will brighter shine"'

'In quaint old Germany,
Where fairies most abound,
And where the cleverest housewives
In all the world are found,

They tell us that the Easter eggs
Are laid by th' Easter hare,
And yet they don't know why, Jane:
We do—We have them there

We know the reason why, Jane,
In England, aren't you glad?
The Easter hare 's the March hare
And the March hare is mad.'

This is one out of many letters to the same child friend, written at a time when his wife was dying

13 Jan. 1914.

(Forgive bad writing. I have so much to write that I have to write quickly.)

MY DEAREST JANE,

It was very sweet of you to write me another letter because you were not sure whether you had written. You did

write, but I am very pleased to get another letter, for the first showed the influence of the whirl of Xmas gaieties and was what we grown-up people call ' merely common form '.

You hoped I had a lovely Xmas as no doubt you did and the people to whom that was possible, but I was consoled by finding that you hadn't even signed your name—for which we grown-ups have another long word ' preoccupation '.

I knew you really had been overwhelmed by the good things of Christmas and had been put out of your real self. But your dear little second letter made everything all right. ' I' am so glad to hear you have had such a pleasant time. . . . I am sorry to say Mrs. Wilson is very very ill.

With much love.

J. COOK WILSON.

He did not talk commonly on so-called religious topics, in fact I do not think he was in the normal sense of the term a religious man Perhaps he thought it unwise to discuss such subjects with every friend He read a striking paper in Professor Sanday's lodgings upon the Ontological proof for the Existence of God.[1] It was not all read, though the reader stopped close upon midnight. Its purport was that belief in God, apart from revelation, is not to be proved rationally, but rests upon the universal instinct of reverence for some being higher and better than ourselves Thus it was akin to Jacobi's saying that ' the belief in a God is an innate devotion before an unknown God '.

Upon his father's death, he came to stay with us in the country and we had many walks and talks. One evening we were standing in the graveyard of Great Brickhill, Beds., which commands a magnificent prospect. The sun was sinking with more than his usual splendour and the thought of Gray's *Elegy*, a favourite poem of his, was in both our minds I ventured to question him upon immortality. He remained quite still, gazing out as I had seen him in his old rooms at Oriel, then quickly turned the conversation back to the *Elegy* and so to his father's memory. Something however of his more intimate

[1] Sanday collected the representatives of most diverse religious views to hear what was advertised as a paper ' On the Ontological proof for the existence of God ' The notes revised by Wilson are printed in Part V in their rough, unstudied form, with a few later additions. Wilson used to say that the essence of the matter lay in St Anselm's ontological proof, restated in modern terms The paper itself, however, is neither a statement nor a criticism of that proof.

feelings in the matter may perhaps be gathered from the following letter written four months after Mrs. Wilson's death:

12 Fyfield Road, Oxford.
11 May, 1914.

The news of your dear boy's death was a great shock to me. . . .

My heart goes out to you both in your trouble and I assure you of my deep sympathy. Many hearts will go out to you, and that you will find a comfort as I did I have looked often at the kind words you wrote to me when my own sore trouble overtook me, and I little dreamed I should be sending a message of sympathy to you in a similar calamity before I had thanked you for them. The truth is that I have only been able to begin my answers to my kind friends rather late, and for many reasons can only get on with this expression of my thanks rather slowly. I have found it a great solace. May you be rewarded now for your share in comforting me then Perhaps I might be allowed to add a word beyond my own personal sympathy. I will tell you quite frankly that it seems to me one's philosophy, if one faces out the whole bitter problem, leads inevitably to a conviction of personal immortality You know that I am quite an uncompromising thinker, and so you may be glad to know my deliberate conviction I daresay that some well-meaning philosophers—especially when not in the reality of a bereavement—might be afraid to profess the ordinary and, as it seems, uncritical religious belief not only in immortality but in our reunion with our beloved ones who have done with the mortal and changeable body. I am glad to think that an absolutely severe philosophic consideration seems to me to lead to this conviction of the ordinary religious consciousness Love *is* the victor over death.

. . . .

With kindest regards,
Yours truly,
J COOK WILSON.

My dear wife took such sympathetic interest in your dear boy's illness and her heart was full of pity for you. She did so keenly feel the sorrow of others.[1]

At this period he became once more as he was in his childhood, overflowing with affection and most dependent upon his friends. He might well have said, in his own choice phrase of childhood,

[1] J C. W to F J W.

'You ask me to strike the key of pleasure, but I have none to tell you of'.

Yet our memory of him must not be saddened by the deeper shadows which fell upon the evening of his days. He had a very happy span of years, 'passing through common life with the natural emotions of common men'. He suffered in the deepest part of that common nature during his sister Margaret's insidious illness. He had to face the inevitable loss of two beloved parents and last of all that of his own wife, yet even after Mrs. Wilson's death his natural elastic gaiety began to reassert itself. The summer before he had bought a motor-car and this gave him needed rest and recreation. 'I got something this summer which gave me much pleasure—a little motor-car I do so enjoy taking my friends in it In general I can only go in the mornings I have on the doctor's advice been motoring again lately. I wasn't well and thought I'd better not: but he said I must and it has done me good Lately I took Mrs. Ross to Church Eynstone (for a servant's character!), 32 miles and back. Also I took out the Rector of Exeter and Professor Butler, formerly of New College, and Mr. Jenkinson . . I know you will be glad to hear this because I have not been able to get away this Xmas [1913] at all'[1] Earlier than this he used to draw Mrs Wilson about in a trailer, that earlier type of the side-car, and would come in, exuberant with health and spirits and the pleasure of giving pleasure to her. One day he came back from a big ride alone and, turning to his wife, quoted with allusion to the ease with which he had compassed so many miles:

'Away went Gilpin, and away
Went postboy at his heels!—
The postboy's horse right glad to miss
The lumb'ring of the wheels'

I am sorry that I never saw him in full career in his motor-car nor ever drove with him, but those who did have assured me that he bated no whit the recklessness which had been his in the old days of the bicycle.

And so his life passed in Oxford, a tutor of the old school; to work or to lecture in the morning; to doze for an hour after

[1] J C W. to J C R. F (aged 11½), 13 1 14, quoted also above, p. lvii.

lunch (unless he went afield for exercise), to get up refreshed and work again till dinner and after dinner up to a reasonable hour once more; this, with interruptions to run errands for his wife, to deliver notes of his own or hers by hand to save the postage, to make excursions to the Bodleian or other library; once a week to discuss philosophic topics with a few intimate and younger friends over afternoon tea; this was the tenor of his life in term. In vacations, especially in the summer, he went away from Oxford taking work with him; to Germany, to France, to the Lake country, to the moors or sea, wherever he hoped his wife might benefit and be happy.[1] When away he worked hard or, if he took a day off, he took it without hesitation and drank the sweet pleasures of the countryside or studied the architecture and antiquities of the neighbourhood to his heart's content On these expeditions he had sometimes the company of a congenial younger friend or married couple He might have said 'when you have seen one of my days, you have seen a whole year of my life; they go round and round like the blind horse in the mill', only he would have said it without the repining of the poet Gray and he certainly believed that the horse made some progress and was in no sense blind. On the contrary, regular though his round was, his life was ceaselessly diversified; like a young hound he caught at any and every intellectual trail and only the rigorous performance of his academic duties kept him from infinite digression. He drew a little, taught himself to read Italian, and once began a novel, written in the Miss Mitford or Mrs. Gaskell vein. Mr Joseph, after enumerating the tale of his comparatively few printed works, adds with a spice of humour: 'And among his remains are papers on the existence of God, on the conception of Life, on Homer, on Greek musical modes, on Greek tactics, on the undergirding of Greek ships and the beaks of triremes, on universals and on the good will'[2] To justify the tenuity of his published work we might perhaps apply to him Goethe's saying, 'the man who has life in him feels himself to be here for his own sake, not for the public'.

[1] He left Oxford practically every vacation Some of his letters, which are printed below, are a commentary on the old text *coelum non animum mutant*

[2] H. W. B. J., l c.

His energy of mind continued even after the pernicious anaemia, which at length carried him off, clearly manifested itself. 'Lying mostly in bed, he still worked privately with a few pupils, and even in the spring of 1915 came down to college and delivered half a dozen lectures.' Keenly interested in the progress of the war and optimistic as to our eventual victory, he wrote occasionally to the papers, notably upon the formation of an independent cyclist force and upon the preservation of the teeth of soldiers. He wrote to me more than once, especially in regard to mechanical devices for protection against, and the destruction of, submarines. These I was able to submit in the right quarter and like so many similar letters they received careful attention from the experts in the subject. But the ideas were naturally 'too mathematically conceived'[1] from want of contact with reality. He was, for example, strangely unaware how a shell fired from a ship will ricochet away along the surface of the water. His cyclist idea was adopted and he was gratified by a leading article in the *Manchester Guardian* which described how, in the stress of war, cyclists had protected themselves against cavalry by making a zareba[2] with their machines This was a practical notion of his own which had been very much ridiculed in Oxford common rooms years before

In a sense the moment of his death was timely; he did not live to endure that early summer of 1916, when each day brought its new tale of young scholars killed or wounded, nor the long months of war which followed. He passed away after a few days of unconsciousness on the 11th August 1915, and we were summoned to Oxford to attend his funeral three days later.

As I reached New College the closing words from St. Paul were being read · ' 'steadfast, unmovable, always abounding in the work of the Lord, forasmuch as ye know that your labour is not in vain in the Lord', and the August sun, not long past his meridian, was kindling the glass in Wykeham's ante-chapel and staining the pavement with its broken rays. From Oxford

[1] Said of William Chillingworth, a man 'of a stature little superior to Mr Hales', by Lord Clarendon, *Life*, ed 1759, p 30 (Quoted in *Characters of the Seventeenth Century*, D. Nichol Smith, Oxford, 1920, p 177)

[2] Called by him a lager, cf *Military Cycling*, 1890, note to p 9 (pp 17–18)

we drove to Islip, where he was laid to rest beside his wife and parents and sister in the churchyard which commands the valleys of the Ray and Cherwell. A month later I was standing on the little eminence, called Mont Rouge, watching our English shrapnel bursting over the grim lines of the enemy front, and only with difficulty could I free myself of the notion that my old company commander in the 1st Volunteer battalion of the Oxfordshire Light Infantry was at my side So strong was his vitality that, for the first time in the presence of actual warfare, I turned involuntarily as if to hear his appreciation of the features of the ground. That closing scene was appropriately set amid the beauty of the College which endows the chair he held; the broken sunlight seemed to speak of the intense pleasure he took in the glory of the physical Universe and in the power of minds like Newton's; an English churchyard [1] is a good resting-place for the son of a minister of the Methodist New Connexion, who with a full measure of the polemical temper of that sect loved well the order and dignity of the National Church; finally, the stern struggle in Flanders seemed no inappropriate background to the close of a life dedicated in so much of its rare leisure to training a succession of scholars in the rudiments of military science.

Remarkable though these fragments of Wilson's higher thinking may appear and highly characteristic of his fearless and uncompromising mind, they do not exhibit, save dimly, the power of his confident and passionate assertion of a hardly won philosophic creed Except in their literary form they cannot present the unaffected simplicity of their author, nor the almost excessive devotion to detail that was his characteristic in small things as well as great. No words of mine will convey a true notion of the exuberant and boyish happiness which triumphed for so long over domestic anxiety and sorrow, the entire absence of a scholar's self-consciousness and timidity, the affection for friends and the love for parents and little children, which in his nature ran so strong and deep

[1] In his account in German of Mrs Wilson's funeral he says of what was to be his own resting-place 'The grave itself, adorned with a celtic cross of white marble, occupies the highest point of the lovely churchyard, with an extensive view of a pretty landscape.'

We shall always regret that the necessity of a long absence prevented most of us from waiting upon Wilson's declining days. His loss makes a greater gap than we expected in the circle that enjoyed his friendship and profited by his words. When we returned, Oxford, swollen by the unexpected volume of maturer students, was only gradually resuming her normal channels, had hardly subsided within her banks. She was recruiting her heavy losses, restoring and remaking her studies, discussing how best to commemorate her dead, ambitious of a future worthy of her past Oxford the same no doubt in essence, yet how changed for the men of my generation! In the tyranny of war, manhood had slipped into middle age; our own ranks were thinned, and we marked for the first time that the majority of those who taught us were no more Without the familiar faces Oxford is strangely unfamiliar; but of all that is gone, more than my gay company of the Training Corps,[1] the happy careless friends, my pupils, more than the cheerful and witty Charles Fisher,[2] or Foster Cunliffe's[3] curious melancholy, even more perhaps than the gentle and exquisite irony of Reginald Tiddy,[4] I miss the little figure, the light quick step, the good grey head, the secure affection, the profound philosophic ardour of Wilson himself.

A. S. L. F.

March 1921.

[1] E Company, O U O T.C, was handed over by me in 1913–14 to J L Johnston, formerly Junior Demy and afterwards Fellow of Magdalen and then Fellow of New College He served with the 52nd in France and fell at Festubert 12 v 15 He would certainly have risen in Church or State I wish specially to mention two of my Colour-Sergeants, both of New College H T Cullis of Alleyne's College of God's gift at Dulwich, Scholar of New College in 1899, was on leave from India when war began He fell at Armentières 10 xii 15, serving in the 12th (Service) Bn Rifle Bde The other is Geoffrey W Polson, killed at the Aisne, during the first allied counter-stroke, 15 ix 14 He was a subaltern in the 1st Bn Royal Highlanders There were no better N C O 's in the old Volunteer Bn. and the new Training Corps Of the cadets who attended my lectures in military subjects in May and June 1914, sixteen out of forty-four fell in the war

[2] Charles D Fisher, Scholar of New College, Senior Student and Censor of Christ Church, lost in the foundering of H M S *Invincible* in the action off Jutland, 31 v 16

[3] Sir Foster C H Cunliffe, Bart, of New College, Fellow of All Souls, formerly Colour-Sergeant of E Company, O U R V Bn., killed serving with the 13th (Service) Bn Rifle Bde. on 10 vii 16 at the battle of the Somme.

[4] Reginald J. E Tiddy, Scholar and Fellow of University, Fellow of Trinity, one of Wilson's cyclists Killed in the trenches when commanding the men of his village in Oxfordshire in the 2nd Territorial Bn Oxf. & Bucks. L I. on 11.viii.16.

ELENCHVS OPERVM TESTIMONIA

2773-1

LIST OF PUBLISHED WORKS AND CONTRIBUTIONS TO REVIEWS

[The articles in German periodicals are written in that language The following abbreviations are used ·

O. P. S. = Transactions (or Proceedings) of the Oxford Philological Society.
J of P = The Journal of Philology
Cl R = The Classical Review
Cl Q = The Classical Quarterly

The remarks in square brackets are to indicate the character of the articles and sometimes to show additional contents]

1873.

Chancellor's Latin Essay, *Quaenam fuerit revera Epicureorum philosophia*, recited in the Sheldonian Theatre, Oxford, 18 June, MDCCCLXXIII, by John Cook Wilson, B.A , Mathematical Scholar of Balliol. (Oxford)

1879

On rearrangements of the Fifth Book of the *Ethics*
O P S , No 83, 14 March.

Aristotelian Studies, I On the structure of the Seventh Book of the *Nicomachean Ethics*, ch 1–x. (Oxford)
O P S , No 84, 9 May

1880

J Cook Wilson, Aristotelian Studies, I, Vom *Verfasser*
Gottingische gel Anzeigen, St 15, 14 April
[An account of his book, with discussion of interpolations in *Eth Eud* , *Cat* and *An Pr*]

Prof Susemihl's Edition of the *Nicomachean Ethics*
The Academy, 26 June

1881.

Aristote, *Morale à Nicomaque* (8me livre) Par L Lévy.
Phil Rundschau, i 39.
[Review of the book, with suggestions as to the text-structure and the existence of parallel versions here and elsewhere.]

Notes on some passages in the *Politics*
J of P. x, pp 80–6.
[Structure of text, Bks IV. 3 ; III. 10–11 ; V 1–3 ; VII. 1–3 and 12–13 (13–15) and 1260^{a} 22, 1298^{a} 1, 1342^{b} 23.]

1882.

(i) Zeller's interpretation of Xen. *Mem.* iv. 2, 34 and iii. 2, 4. [Socrates' eudaemonism.]

(ii) Plato, *Phil.* 31 A.

(iii) Aristotle's criticism of the definition of pleasure in the *Philebus.*

(iv) Theophrastus, *De Sensu*, § 90. [emendns. of Plato, *Tim.* 66 D; Arist. 443^{a} 21, 359^{b} 32.]

O. P. S. 1881–2, pp. 10–13, 10 Feb.

Conjectural emendations in the text of Aristotle and Theophrastus.

J. of P. xi, pp 119–24.

[Aristotle, 443^{a} 6, 444^{a} 16, ^{b}2, 453^{a} 27, 457^{a} 31, 1134^{a} 1, 656^{a} 29, and Theoph *De Sensu*, § 90]

Studien zu Aristoteles Politik von H Buchsenschutz

Phil Rundschau, ii 39

[Attempts to prove that order of books in the Aristotelian vulgate is as old as Arius Didymus' epitome]

The interpretation of certain passages of the *De Anima* in the editions of Trendelenburg and Torstrik

O P. S. 1882–3, pp 5–13, 17 Nov.

Ἀριστοτέλης περὶ ψυχῆς by E. Wallace, M A.

Phil Rundschau, ii. 47.

1884

The genuineness of Aristotle, *Rhetoric*, ii 25–6 [also text of 1402^{a} 29 and ^{b} 19]

The possibility of a conception of the Enthymeme earlier than that found in the Rhetoric and the Prior Analytics

O P S 1883–4, pp. 4–6, 22 Feb. and 7 March.

1885.

De Anima, 431^{b} 24–6

Meteorologica, iv, ch. 8–9 [on τεγανόι = soaking].

Nic. Eth. 1097^{b} 8 [cf 1887].

O. P. S. 1884–5, pp. 11–13, 6 March

A recent emendation of Aristotle [*Metaph.* 1035^{a} 14].

The Academy, 2 May

1886.

Nic. Eth. 1133^{a} 14–16

Plato R. 330 E.

Nic. Eth. iii. 1. 17.

O P. S. 1886–7, pp. 2–4, 5 Nov.

1887.

The sphere of Corrective Justice in *Nic. Eth.* v.

Nic. Eth. 1143^{b} 5.

On Trendelenburg, *Elementa Log. Arist.*, § 1.

[Doctrine of truth and falsehood in *de Int.* and *de An.* Simple notions.]

O. P. S. 1887–8, pp. 2–6, 4 Nov.

Recent emendations of the Aristotelian text.

The Academy, 3 Dec.

[Vindicates, against H Jackson, MS. readings of *Eth. Nic.* I. vii 7–8; VII xiii 2, II vii 14; VI v 4 and 6; II. vii 1, V vii 1, I vi. 1]

1888.

Nic Eth 1097^{b} 8, 1145^{b} 23–4

O P S 1887–8, pp. 20–1, 3 Feb

Some recent emendations of Aristotle and Plato

[Vindicates MS readings of *Eth Nic* 1145^{a} 27, ^{b} 30, 1147^{b} 31, 1177^{a} 12, 1179^{b} 16, IX x §3, and Plato *R* 438 E, and illustrates A 's tendency to elliptical language]

A recent emendation of Sophocles

[Vindicates MS reading of *Ajax*, 646–9, against van Leeuwen.]

The Academy, 18 and 25 Feb.

Lange's theory of the conditional sentence in Greek

[εἰ originally a relative and (probably) a temporal pronoun.]

O P S 1887–8, p 22 [for brief account see ib 1889–90, pp 54–5], 8 June.

1889

Some recent emendations in the text of Plato

[Vindicates the MS. readings in *R* 537 C and 402 A.]

The Academy, 23 Feb

The *Timaeus* of Plato, ed R Archer-Hind

[Reviews in] i The Classical Review, iii, pp. 114–23, 183–4.

ii The Oxford Magazine, 13 March.

Mr. Archer-Hind's ' Last Word '.

The Academy, 8 June

On an Evolutionist theory of Axioms, an Inaugural lecture. Oxford.

On the interpretation of Plato's *Timaeus*. Critical studies with reference to a recent edition. London (D. Nutt).

Manual of Cyclist Drill for the use of the Cyclist Section of the O.U.R.V.C Oxford.

1890.

Military Cycling, or Amenities of Controversy. Oxford

On some apparent anomalies in the use of *μή*.

O. P S. 1889–90, pp. 23–56, 13 June.

1892–3

A point of Infantry drill.

A. and N. Gazette, 16 Jan 1892

The pseudo-Aristotelian treatises, *De Melisso, Xenophane, Gorgia*

Cl. R. vols. VI and VII

[Six articles on Apelt's edition, contains incidentally many suggested emendations]

1894

Aristotle, *Soph. El.* 166^{b} 32, 171^{b} 37, 172^{a} 25 and *Top.* 162^{b} 1.

O. P S. 1894, 12 May

1895

Testimonia for the text of Aristotle's *Eth. Nic*, *Metaph.* and *An. Po*

[From Ptolemy, Theon, &c]

Cl R. ix, pp. 1–4

1896.

Aristotle's Classification of the arts of acquisition.

[See 1902]

Cl R. x, pp 184–9, May

1897 and 1898

Zu Aristoteles' *Politik*, 1258^{b} 27–31.

[A sequel to the article in Cl. Rev of 1896.]

Archiv f. Gesch. d Phil xi 2, 246–62 and xii. 1, 50–4.

1900

Suggestions for Cyclist Road Practice in Skirmishing and Patrolling. Oxford.

Inverse or *a posteriori* Probability.

[A proof of the principle and an explanation of the philosophical meaning of probability.]

Nature, 13 Dec.

1901.

On Aristotle's *Poetics*, 1451ª 22.
Cl. R. xv, pp. 148–9

On the meaning of ἀπαγωγή in Aristotle and other Greek writers.
O. P. S., 7 June; Cl R. xv, p 430

Probability, James Bernoulli's theorem
[A simpler proof of the theorem]
Nature, 14 March

1902.

Edward Poste
Obit. notice in The Oxford Magazine, 4 June.

Eth. Nic. VII. xiv. 2 and xii 2.
[Correction of articles dated 1896, 7 and 8]

Μεγαλοπρέπεια and Μεγαλοψυχία in Aristotle.

On the ὑποζώματα of Greek ships. [Cf J. Adam, *The Republic of Plato*, ii, p 445]

Plato, *R.* 616 E [against Kroll's ed. of Proclus *in Rep.*; astronomy of the myth of Er, the Armenian]
Cl. R xvi, pp. 23–8, 203, 234 and 292–3, O. P. S., 31 Jan.

The astronomical conceptions in Plato, *R*, Bk X
[Vide J Adam, l c, ii, App VI, pp. 470–9]

1903

Memoir of the Rev T. W Fowle, M.A, late Rector of Islip, Oxfordshire Oxford

On the geometrical problem in Plato's *Meno*, 86 E.

Note on [Aristotle] *de lin insec* 970ª 5
J of P, vol xxviii, pp. 222–40

Eth Nic 1135ᵇ 19
Cl R xvii, pp 384–5

1904.

Pseudo-Euclid, *Introductio Harmonica* [text on Concords emended].

On the Platonist doctrine of the ἀσύμβλητοι ἀριθμοί.

The problem of the Greek modes [criticism of D. B. Monro].

Musici Scriptores Graeci, Emendations and discussions.
Cl. R. xviii, pp 150–1, 247–60, 278; O. P. S., 12 Feb., and 387–91

1905.

On the Traversing of Geometrical Figures. Oxford.
Addendum to the above. Oxford.
Homer, *Od.* xxiv. 336 seq [vindication of the MSS.]
The idea of *κάθαρσις* in Aristotle's definition of Tragedy.
Cl. R. xix, pp 144–7 and 321–2 (O P. S , 2 June).
Lewis Carroll's Logical Paradox [signed W.]
Mind, N S , No 54, pp. 292–3

1906.

On a supposed solution of the 'Four-Colour Problem' [against Archbishop Temple]
The Mathematical Gazette, iii, No. 58, pp 338–40.

1907

(i) Memorial Notice of D. B Monro
Bursian's Jahresbericht, xxxii B, pp 30–40.
(ii) David Binning Monro, a short Memoir Oxford
[Translated, with alterations, from (i)]
(iii) David Binning Monro, 1836–1905.
Proceedings of the B A. 1907 [(ii) abbreviated].
Plato, *R.* 442 B
Eth Nic 1148a 23 [emendation]
Cl R xxi, p 106

1908

Clement Alex *Stromateis*, i 158 [emendation].
Cl Q. ii, p 293

1909

On the use of ἀλλ' ἤ in Aristotle
Plato, *Phil* , 31 C.
Clement Alex , *Strom* iv. 23 [emendation].
Cl Q iii, pp. 121–6, 216–17

1910.

Natural anomalies in original composition.
[Refers to a paper to O. P S , 1909, on The Similes of Homer.]
Eth. Nic. IV. iii. 15
Cl. R. xxiv, pp. 118 and 144–5.

1911.

Eth. Nic. 1123^{b} 31.
Cl. R. xxv, pp. 132–5.

1912.

Aristotelian Studies, I (1879), Reissue of, with additions. Oxford.
[A Postscript on the authorship of the parallel versions and supplem. index.]

Inaugural lecture (1889), Reissue with introd. sect. omitted. Oxford.

Syllogism of the Abbé and the penitent.
The Athenaeum, 10 Aug.

1913

A metaphysical problem written in Greek in imitation of the style of Aristotle
The Oxf. Mag xxxi 16, 6 March.

Plato, *Soph.*, 244 c [Criticism of H. Jackson]
Cl. Q vii, pp 52–3.

De Motu Anim 698^{a} 16–24

Rh. 1403^{b} 21 seq , *Po* 1449^{a} 23 seq

Phy. 231^{b} 21.

Eth. Nic. 1122^{b} 11–18.

Plato, *Tim.* 37 c.

Catullus, lxiii. 31

Metaph. 1048^{a} 30 seq.
J. of P. xxxii, pp. 123–4, 137–65, 166, 167–9, 300–1.

Po. 1451^{a} 22, 1447^{b} 13–16.

On the meaning of λόγος in certain passages in Aristotle's *Nicomachean Ethics.*
[λόγος to be translated by 'reason'.]
Cl R. xxvii, pp 7–9, 113–17.

TESTIMONIA

'To Professor J Cook Wilson, of New College, Oxford, I owe a special debt of gratitude for undertaking in response to my appeal an exhaustive discussion of the astronomical difficulties in Book X and unreservedly placing at my disposal the full results of his investigations'—J Adam, *The Republic of Plato* (1902), vol. i, pp. ix, x (Cambridge)

'It is only through the kind co-operation of Professor Cook Wilson that I have at last been able to form a definite view as to the meaning and solution of this extremely complicated problem. From 616 B to the middle of 617 B, my commentary is mainly based on the exhaustive criticisms and investigations which he has sent to me'—Ib, vol ii, p 441

'This Appendix is the result of prolonged discussions with Professor Cook Wilson and freely reproduces nearly all his most important arguments'—Ib, vol. ii, App. VI to Book X, p. 470.

'[The Editor] has to thank Mr J. C. Wilson . . . for the most cordial and ample assistance in dealing with the numerous passages in which mathematical knowledge was required. It is believed that the translation of these passages will, owing mainly to his help, be found on the whole correct and intelligible'—Lotze, *Logic*[2] (Eng. Trans.), ed. by B Bosanquet (Oxford, 1888), vol. i, p. vi.

'The Editor has to thank Mr. J C. Wilson . for ample and ready assistance when consulted on passages involving the technical language of Mathematics or Physics, if the Author's meaning in such places has been intelligibly conveyed, this result is wholly due to Mr. Wilson's help.'—Lotze, *Metaphysic* (Eng Trans.), ed. by B. Bosanquet (Oxford, 1884), p. vi

'Line of treatment [of Plato's *Parmenides*] suggested by Professor Cook Wilson.'—B. Bosanquet, *Plato's Theory of Forms* (Oxford, 1903), p. 14

'Sed est cui prae omnibus grates agam atque habeam, virum dico si quis alius 'Αριστοτελικώτατον, I. C. Wilson: quem ut socium mihi in hac editione paranda futurum speraveram, ita postquam instantiora eum negotia alio averterant, alienum opus adiuvare et, quantum potuit, amico suppetiari non recusavit; haud exiguam

enim libri partem una relegimus, crebrisque colloquiis collato studio difficillima quaeque excussimus.'—*Aristotelis Ethica Nicomachea*, I. Bywater (Oxford, 1890), p. vii.

'The essential symmetry of the inverse and the direct methods . . . is shown by an elegant proof which Professor Cook Wilson has given for the received rules of inverse probability.'—F. Y. E., *Encycl. Brit.*, xi, p. 378b, note 10

'To Professor Cook Wilson in particular, who read over the whole of the proof prints of the work and made a number of acute criticisms, I am much indebted'—*Trichotomy in Roman Law*, H. Goudy (Oxford, 1910), preface. (German translation *Dreiteilig-keit im römischen Recht*, E Ehrlich, 1914.)

'. . . the debt which I owe, in common with so many of his older or younger pupils, to Prof J Cook Wilson, whose death occurred while these sheets were passing through the press Various foot-notes will show the use that I have made of his unpublished teaching; but his illness prevented me from submitting to him what I have written, and his authority must be made responsible for no errors that I have made. His few and scattered publications can do little to convey to strangers the power and stimulus of his personal teaching. And there are subjects on which, by his combination of scholarly and mathematical with philosophic insight, he was qualified as few have been to produce new work of real value.'—*An Introduction to Logic* [2], H. W. B. Joseph (Oxford, 1916), pp. vi and vii.

'My obligations are many and great . . . to Professor Cook Wilson, to have been whose pupil I count the greatest of philosophical good fortunes Some years ago it was my privilege to be a member of a class with which Professor Cook Wilson read a portion of Kant's *Critique of Pure Reason* and subsequently I have had the advantage of discussing with him several of the more important passages. I am especially indebted to him in my discussion of the following topics. the distinction between the Sensibility and the Understanding, the term "form of perception", the *Metaphysical Exposition of Space*, Inner Sense, the *Metaphysical Deduction of the Categories*, Kant's account of "the reference of representations to an object", an implication of perspective, the impossibility of a "theory" of knowledge and the points considered, pp 200 med.-202 med., 214 med.-215 med. and 218. The views expressed in the pages referred to originated from Professor Cook Wilson.'—Kant's *Theory of Knowledge*, H A. Prichard (Oxford, 1909), pp. iii–iv.

'Throughout this Essay I am deeply indebted to the criticisms and suggestions of Professor Cook Wilson. In particular, I have substantially adopted his account of the distinction between abstract terms and adjectives, in place of a less satisfactory view of my own.'—*Personal Idealism*, ed H. Sturt (1902). Note 1 to Professor G. F. Stout's essay on *Error*.

'I owe to conversation with Prof Cook Wilson the first suggestion that this view is one for serious consideration, but for nothing in my working out of it can I claim his authority.'—*Problems in the relations of God and Man*, C C J Webb (London, Nisbet, 1911).

'Dedicated in affectionate gratitude to the memory of a great thinker and a great teacher, John Cook Wilson, sometime Wykeham Professor of Logic in the University of Oxford.'—Dedication of *God and Personality*, C. C. J Webb, Fellow of St. Mary Magdalen College, Oxford. (London, Allen & Unwin, 1918)

'. . . as my lamented and honoured teacher, the late Professor Cook Wilson, did in a paper of marked originality, which made a great impression on those who heard it read at Oxford, and which I hope may hereafter be made public, when the return of peace shall have set his literary executors free to carry out the pious task of giving to the world what he has left behind him'—Ib., p. 119, foot-note 6.

Referring to Martineau's works on Ethics and Religion, Professor C. C. J. Webb says: 'In later years I have re-read them with greatly increased admiration and have seen how well this writer deserved the commendation which I recollect my lamented teacher, Professor Cook Wilson, long ago bestowing on him for his bold faithfulness to the facts of our common moral experience.'—*Divine Personality and Human Life* (London, Allen & Unwin, 1920).

'So ist das Verhältniss schon richtig von Herrn John Cook Wilson, dem Aristotelesforscher, beurtheilt, der auf gutige Verwendung des Herrn Prof. O. Francke . die drei Hss, wie ich sagen darf, mit ausserordentlicher Genauigkeit collationirte.'—Διισσοὶ λόγοι, Ernst Weber, Phil -Hist. Beitr. (p 35).

'In the attempt to interpret this difficult passage I owe much to the late Professor Cook Wilson, who discussed it with me.'—*Aristotle's Metaphysics*, W. D. Ross (Oxford, 1924), vol. ii, p. 268.

'I am indebted to my friend, Mr. J. Cook Wilson, Fellow and Tutor of Oriel College, for many valuable hints in connection with the Introduction.'—*Aristotle's Psychology*, Edwin Wallace (Cambridge, 1882), p. vii.

See the following notices:

S. Ball in *The Oriel Record*, Sept. 1915, pp 246–8, *Oxford Magazine*, 22 Oct. 1915.

The late Rev. F. H. Hall in *The Oriel Record*, Sept. 1915, p 245, 'Peace and fresh service to that imperious spirit'.

Mr. H W. B Joseph, *Proceedings of the B. Academy*, vol. vii, pp. 1–11.

Mr. H. A. Prichard, *Mind*, N S., xxviii, No. 111, pp. 297–318.

FAMILIAR LETTERS

1859—1914

(Numbered 1–72 inclusive)

The following letters were addressed:

To Mrs. Wilson senior Nos 1–6, and 8–12.

To I. Bywater. No 7.

To Mr. J W Sharp No 13 (from Wilson's own copy).

To Rev. S C Parmiter. No. 14.

To B. Bosanquet Nos. 17, 24–6, and 59.

To a Schoolmaster. No 27 (from Wilson's own copy).

To Mr. H. A. Prichard. Nos. 28, 30, 31, 34, 39, 60, and 61.

To Sir W. Henry Hadow. No. 58.

To Mr. Colin Gilray. Nos. 62, 63, and 70.

To C. Cannan. Nos. 64 and 67–9.

To Lieut-General H. D. Farquharson. No. 71.

The remainder were to myself or my wife. They are often undated but I have indicated what I believe to be the dates.

I have to thank those ladies and gentlemen who have permitted me to use this material

1

[Shireland Hall, Birmingham.]
Wednesday aftnoon
[? 10th August [1] 1859.]

MY VERY DEAR MAMMA,

I received your dear letter this morning, the reason that I wrote my letter so bad was I couldnt keep from crying. I hope that all are well give my love to dear little Maggie, many kisses for you. I have written this very badly as the other and for the same reason. Miss Simmonds does not know the reason my collars were iron moulded, she says I shall not want the 2 collars, she sends her very kind regards to you, I hope that Grandmamma is better give her my love and lots of kisses. Your letters make me cry so, your ever

affectionate son
JOHNNY.

MY VERY DEAR PAPA

I have to tell you a trouble that makes me very miserable you know you told me to tell J. Wright and J. Mackenzie that as they were honourable young gentlemen they would pay me for my umbrella but I could never get a favourable opportunity to tell them for if the boys heard me tell them about honourable they would shout after me I cannot exactly explain why and that would make me more miserable. Jim Wright says that J. Mackenzie says that he will not pay for it yet because he does not want to break into his pocket money yet. I had a nice journey when I left you it was about ½ past 6 when we got here. I don't know how many boys [2] we have Albert Ellis is my chum. I am going into a book in Latin called Nepos and

[1] This was written apparently on the second Wednesday of his second Half The first page is to his mother, the letter to his Father takes page 2 and part of page 3.

[2] The next letter gives 49 as the number The preceding letter says, 'When we got near Birmingham John McKenzie took my umberella and had a scuffle with James Wright and they broke the handle of'

I shall try to get into Astronomy. The drawing master thought that I should win the prize in this half. Dear Papa I cannot live away from home. If you want me to die send me to this place or away from home. I do not say anything of this to anybody. Lots of kisses. Your affectionate son

JOHNNY.

P.S. I will try to write well.

2

Shireland Hall,
Birmingham,
December 1st, 1859.

MY DEAR PARENTS,

It is with great pleasure that I inform you that the vacation will commence on the 16th inst. The school will be reopened on the 1st of January. Please to send the money for my travelling expenses as soon as possible and give me all needful instructions for my journey. Please to give my love to all at home. Hoping that you are quite well,

I remain,
Your affectionate son,
JOHN COOK WILSON.

3

The Rectory,
Grasmere.
July 19 [? 1872].

MY DEAR MAMMA,

I am much obliged to you for enclosing Mr. Case's letter. I am much amused at your apologising for opening it seeing that you appear to have read it. I am glad to hear the touching account of Puss: you don't say whether he gets his lights very regularly. You needn't envy my staying here. It rains with few intermissions in bucketfuls. The most useful of all garments is a mackintosh: moreover I find it an awful grind to keep these men going: but I don't give them more than 3 hours a day among them. Consequently I would much prefer to be like you, at home: than like me, here. . . . Today was the festival or ceremony of 'rush-bearing' at Grasmere Church.

All round the churchyard wall inside and I think on the top stood children with wooden frames covered with flowers and devices made of flowers and rushes. I don't know what it all means. . . .

Papa need not put B A on my letters any more:—*once* was *enough* (July 20).

4

Göttingen June 16
[? 1875].

MY DEAR MAMMA

. . . . . .

I am afraid Papa wont be allowed to retire, but you *mustn't bother much about the arrangements of the house you* may be sent to as you will so soon be out of it again—by the middle of September at latest, I hope. I have just written to Papa. I told him how mistaken his answer to the President was and how he might repair it I am glad too that you found yourselves lodging in a pretty country—that is a great comfort in case Papa retires. Anyhow I trust that this year you will begin to have a quiet life for the first time. We ought to be very comfortable, if we are careful and when the furniture is paid for we shall be positively well off I hope to keep my own expenses even when at Oxford within the limits of my Fellowship We have good weather here, not too hot I and Meggy have had some good walks. She is a great comfort to me in very many ways I am very thankful to have such a sister. I don't wonder at the people here being fond of her. She is decidedly very much better in health. I don't trouble myself now much about my English acquaintances here. Some of them I don't care very much about and on the whole I feel comfortabler at home or walking about with Meg than with them. I forget whether I told you that I had a very kind letter from Butler, the new Dean of Oriel. I am sure he will be a very good friend to me hereafter, your affectionate son

J. C. WILSON.

5

Sept. 13 [1882].

MY DEAR MAMMA,

Yesterday I went with Shadwell to see our Littleworth estate. I walked about a mile and a half to Besselsleigh where Shadwell, driving from Oxford, picked me up. The road, the one I hope to traverse when I bicycle to Clanfield, is a beautiful one We had a splendid day and I looked down upon you with the opera glass from the hill, Clanfield church being visible among the trees Of this attention you were of course unconscious. We found everything going on well The estate is a beautiful one and extensive, comprising a fine manor house with a small park (for a park) at Wadley.

[The rest is an account of the fascinating ways of his baby son, including 'the way the sly dog hints what he wants is amusing. "Dat *Father's* cake, poo Father wants it", as though his own anxiety was that I should eat my own cake This transparent hypocrisy is awful at such tender years.'] Best love to all, your affectionate son

According to this evening's Echo, the great stronghold Tel-el-Kebir was taken this morning by our troops

6

August 7th, 1888.
Hotel de la Marine
Arromanches par Bayeux.

MY DEAR MOTHER,

I was glad to get your letter. I tried today to get a photograph for you with a peasant woman in the cap of the country but was unsuccessful. They wear a *white* cap with a white starched band bound over it something like this only the effect, as you will believe, is much prettier [pen-and-ink drawing]. I have been twice to see the beautiful cathedral of Bayeux—architecture 11th (one of the towers), 12th, 13th and 15th century. In the nave are fine Norman arches, with the genuine Norman Byzantine decorations, especially the zigzag round the arches [sketch] but the greater part of the architecture is much later especially in the chancel or choir, which looks like

our Early English decorated. The central tower of the cathedral is I think of 15th century (time of wars of Roses) and is very beautiful, the tracery of the windows in it (open without glass like those in tower of St. Mary's, Oxford) is very light and elegant. Ralph and I went up into the lantern (300 feet and over high). I also saw all the famous Bayeux tapestry, attributed to Matilda, wife of Wm. Conqueror, with the history of expedition to England ending in Battle of Hastings. Bayeux is a picturesque medieval town. There are shops with old China —French mainly &c—I tried one of them but find it dear and only bought a few trifles. . . I took Ralph to Bayeux on the tricycle The people thought it so charming to see him sitting behind. Today we made a short expedition and Ralph had the pleasure of examining a ship wrecked in February last on the sands.

7

Hotel de la Marine
Arromanches
par Bayeux.
Aug. 16, 1888.

To I BYWATER, 93 Onslow Sq London.

As you may suppose I don't get much time for work here. I have however got far enough in A.-H. to be able to form an opinion on his capacity for the non-scholarship part of the Tim⟨aeus⟩. It took a terrible long time to make sure about the math^tic^ and music, with his authorities. As to math. I find he has but little knowledge of Gk math^tic^ and writes authoritatively, as usual, making all kinds of inaccurate statements. Nearly everything is straight out of Martin and Stallbaum and things that ought to be noted are not because he knows nothing beyond what is inside these sources The music is *straight* out of Mart. and Stallb: and no acknowledge^t^ beyond his preface, even where quite necessary. He doesn't know the subject well enough to reproduce these authorities properly or to distinguish between what ought to be given in full and what can be abbreviated. (Often like the schoolboy who, having cribbed the answer, is unable to shew the working or doesn't know it matters.) As to the philosophy he doesn't understand the elements of his business. I draw your attention to the pretentious note on p. 106, which is utter nonsense, as a test passage.

8

Arromanches
Bayeux.
Aug. 24 (Friday) 1888.

MY DEAR MOTHER,

The above little map shews the places which I visited lately—Caen, S[t] Lo, Coutances, Avranches. Caen contains fine specimens of the early Norman Churches, one built it is said by W[m] Conqueror and another by his wife. But perhaps one of the most beautiful was at Coutances. Town set high on hill, abt 6 miles from sea. The Cathedral spire serves as a sea mark. I was at a part of the Sunday morning mass there and the architectural effect was much enhanced by the imposing ceremonial. I think of all the cathedrals and churches I have seen that of Bayeux has the most beautiful exterior on the whole. I shall probably go there again tomorrow on my tricycle and take Ralph who enjoys it all very much.

. . . We went along the coast the other day to see an isolated rock standing in the sea,[1] accessible at low tide. A striking object. I made a sketch of it which I will shew you. Such things rare on this coast. On the Cornwall coast they are common enough.

9

Dec. 4. 1889.
26 Winchester Rd. Oxford.

MY DEAR MOTHER,

. . . My article promises to be successful. It appeared yesterday and the same evening I had a note from a Professor here congratulating me on having completely smashed my Cambridge opponent. I have had great luck in Kriegspiel (the Wargame) and lately completely defeated our best player, or at least one of the best. He had however the great disadvantage of having (through an accident) little time to prepare his plans, whereas I had a long time. We had a game last week in which a real military man (a retired Colonel) commanded the opposite side to that in which I served as a subordinate (this time). He suffered a tremendous defeat, lost a whole battery and a third of his infantry. . . . Your affectionate son,

J. C. W.

[1] [La demoiselle de Fontenables]

10

'S Gravenhage.
Wednesday, June 29, 1892.

MY DEAR MOTHER,

Tomorrow (30th) is dear Meggy's birthday as you reminded me in your letter. There will be fresh flowers on her grave and fresh remembrances of her in all our hearts. You would be glad to hear that I had such a good passage. We do not go to Amsterdam after all until tomorrow (30th) [after all]: so perhaps I may find a letter from you there. We shall take Haarlem—the tulip place—on the way, principally to look at some pictures. Of course the tulips have long been over. I shall be thinking of you and dear Meggy. Mr. Shadwell is as pleasant a travelling companion as can be imagined. The hotel is a very nice one indeed—a sort of picturesqueness and magnificence about it. It is lighted throughout, bedrooms and all, with electric light. The Hague is a beautiful place with its canals and parks We have been to Delft from here, where the famous pottery used to be made. Very little made there now. We have also been to the famous Dutch watering place called Scheveningen, near here. To it and in many other directions there are trams, steam, electric and horse power. Everything in Holland seems as neat and clean and polished as possibly can be. With best love to both, yr. affectionate son,

J. C. W.

11

Hawthorn Cottage
West Malvern.
August 29, 1892.

MY DEAR MOTHER,

I wonder whether you have seen the sad news from Switzerland in the paper. I first saw a paper in which it was reported that Professor H. Nettleship had died from cold and exposure on the Alps, he and his guides being overtaken by bad weather as he was going up Mont Blanc and losing their way in the snow storms. It would have been a terrible thing as he was just going away from Oxford for a term to be with his son who is to commence a musical education in Berlin in the autumn.

However the *Pall Mall Gazette* said that it was R. L. Nettleship, the unmarried brother at Balliol. This I expect is the true version for he usually went to Switzerland in the summer. I have also a letter from Bodington this morning who speaks of R. L. Nettleship and says he met him last year in Switzerland with his two guides and that he seemed to be undertaking then expeditions which were rather beyond his strength. You will remember that he lived with his mother an invalid almost entirely confined to her bed, to whom he showed every attention. No doubt when he went away some of the family would come and stay with her, probably the wife and children of her painter son, so she would not be alone. It will be a most terrible blow to the poor old lady. . . . The loss will be much felt at Balliol. He was Green's successor and their principal philosophic tutor there. . . . The men were very much attached to him for he had a certain nobleness of character. One of his most intimate friends was Mr. Warde Fowler of Lincoln College, the man who is such a good musician and slightly deaf. He will be much missed in the University too He was certainly one of our very best men. He was so gifted and could *write* and speak so well. He was a brilliant scholar and I think one of our ablest men in philosophy.

12

Oriel College
Wednesday.
[? 1892]

MY DEAR MOTHER,

. . . I am to stay in and take care of myself I thought however I would send you a letter by train as I can't come myself. I haven't eaten or drunk anything apparently to upset me. Perhaps I have been thinking too much I am nearly all right again. I wanted to tell you that I asked the doctor to visit you a little oftener, because I thought it prevented you from getting too nervous in the intervals. He wrote in his reply an encouraging account of you. Although you have felt so depressed the action of the heart is steadier and also the other matter which teases you seems to present no disquieting symptoms at all. I am so glad and so grateful. I expect you are

depressed by this uncommon bad weather like everybody but more in proportion as you are so poorly. I have explained to the Cook about the brawn. He quite understands what you mean and will be glad to prepare it. Shall I let him do some for Saturday? To dinner tomorrow we have Mr. Heberden of Brasenose and sister, Mr. Warde Fowler of Lincoln College, Mr. and Mrs. Madan, Bodleian Library, *Mr. and Mrs. Warner* for whom the party is given, Miss Wordsworth, Principal of Lady Margaret Hall and two others whose names I forget. With best love, yr: affectionate son,

J. C. W.

The Clarendon Press present to me has come at last. 3 folio volumes, handsomely bound in half-morocco. You perhaps remember they gave it me for criticising a book for them.

13

[posterior to Nov. 1900.]

When you say you occupy the 'common mathematical position about the relation of the geometrical diagram to geometrical thought' I have a remark to offer which I think may interest you and make you think twice about the *meaning* and value of the common mathematical position . . . when we mean *real* mathematical thought I should say it was pretty fatal to disagree with the common mathematical position But the 'position of a mathematician' on a given question is not necessarily 'a mathematical position'; he may not be judging quâ mathem^{n}, nor using his mathematical faculty at all, though mathematical matter may be involved. For instance, he may conduct a process quite rightly in mathematics; but there is a certain reflection on the process, philosophical, logical, whatever you like, which is certainly not mathematical, but the exercise of a totally different faculty. And it is a great mistake of a man to suppose that because he is (humanly speaking) infallible in the one process (math^{cs}) he is equally successful in the other. Thus, e.g., there are people with a perfect knack of doing certain physical things, but either utterly unable to say how they do them, or, if trusting to their perfect practice they imagine they must have the right theory of them, give [*sic*] a most incorrect account.

We graduate our vocal apparatus with marvellous accuracy when we sing a melody, but this power does not help us in the least to say how we do it. That belongs to the physiologist and psychologist, so far as anything is known of it.

Suppose a genius among vocalists—a Patti or a Reeves—presumed to dictate on the question of how it was done, the scientific investigator of the larynx &c. wouldn't trouble himself much about that. He would admit that a musical ear was necessary to conduct the investigation and concede readily that the great singer or musician had a better musical ear than himself, but he couldn't affect, even for courtesy's sake, to pretend to care about their opinion on his subject. The 'common position' of musicians would be authoritative to him upon a really musical question, but he would be foolish to defer to their common position on the physiological question, if they had one. One can imagine how Plato might have worked out the point in a dialogue

Now there is the same kind of difference between conducting a math[l] process and *reflecting* (in certain ways) upon the method and presuppositions of the math[l] process and faculty. A man may conduct other processes of reasoning too, not mathematical, and fail utterly in the analysis of what he is doing.

For centuries mathematicians were content with the view that geometry had axioms, def[ns] &c, for its principles and given premisses, and got the rest by syllogism, a view originated, as far as records go, by Aristotle In which they shewed they didn't understand processes which they conducted so rightly that it seems a paradox to say they didn't understand them. Of course they understood them in one way but not in another. The common mathematical position here was wrong and it was reserved for Kant, both a real mathematician and a philosopher, to free our minds from this illusion.

Now emphatically the question of the use of the figure in relation to geometrical thought belongs not at all to the sphere of mathematicians as such. One must know a certain amount of Geometry to be able to handle the question, just as a man must have some musical ear to study the larynx &c in relation to sound, but that is not enough nor even to be a very accomplished geometrician. The common mathematical position in

this question must be carefully distinguished from [the] common mathematical position, when mathematical is used in its true sense: it is really a position or attitude of *mathematicians*, but it is not a mathematical position: and therefore, while I absolutely defer to the (common) mathematical position, I haven't the slightest respect for the common position of mathematicians in this question. As they were wrong in a body about the syllogism, so the majority (I suspect) are wrong in the modern question and indeed the error is a consequence of the older one. So if all the mathematicians took off their coats to me (to parody Plato) I shouldn't run away.

There is however a natural reason why mathematicians should have been misled so far as to think this a part of their own subject and therefore one on which they are particularly competent to pronounce The speculations, which produced hyperbolical and elliptical geometry and the theory of $(3+n)$-dimensional space, seem math[1] and purely mathematical, but they are not. They involve mathematics together with philosophical or metaphysical reflection on mathematical processes: for they are only possible by a theory (and a false one) of the use of the figure in ordinary Geometry. The mathematician is thus unconsciously conducting processes which belong to that reflection which I have characterised as not an exercise of the mathematical faculty at all and he, supposing that he is but acting *as* a mathematician, is proportionately confident and often contemptuous of philosophic questioning and doubt. The mathematical investigations here can only be called 'geometrical', or relating to some thinkable 'space', through a mistaken theory of the position of the figure in ordinary geometrical (or Euclidean) reasoning: a theory which is not a mistake in mathematics but a mistake in the philosophy of mathematics; but, through the unfortunate confusion of the two processes and faculties in the same subject, it is presented as a necessary development of mathematics and therefore is bound up mistakenly with the honour of mathematics as such. We therefore who study philosophy and presume to form an opinion on what is a philosophic and not a mathematical problem are put in a false position. . . . Fortunately I can claim to be what perhaps no living mathematician can claim, one of the inventors of hyper-

bolic geometry. For I discovered the main features and theorems of the subject for myself years ago before I knew that mathematicians had done it already and I cannot therefore be treated exactly as an outsider.

As I have said the people who invented the new Geometry were mixing geometrical and philosophic thinking, invading a sphere of which they knew next to nothing—unconsciously—and they shew themselves extraordinarily incompetent in it. I refer especially to the Polish geometricians who started it, who talked the greatest nonsense when (necessarily) touching on the metaphysical question which seemed to them mathematical. These good people take an authoritative tone to such as myself as if we were interfering with their proper province; whereas it is they who have made inroads into ours and while they think that we raw and untrained ones are presuming to judge in their subject: it is they who raw and untrained are presuming to judge in ours I recall an amusing instance. A man (now dead) considered one of the greatest living authorities on hyperbolic geometry, with a great assumption of superiority, brought against me in a debate (London Mathematical Society) as a crushing objection that to every theorem in the supersensible geometry corresponded one in the Euclidean (I knew the commonplace argument) and gravely argued (as is customary) that this was a strong proof of the validity of hyperbolic geometry [1] The principle involved in the argument is such a ridiculous fallacy and so easily seen to be so by anybody accustomed to ordinary logic that I hardly knew how to preserve the outward appearance of good behaviour And to have this infantile nonsense gravely and authoritatively put before one as an important piece of instruction. There is nothing so irritating as when a man who is really a great authority in his own subject pronounces on another of which he hardly knows the elements—not indeed from conceit but simply because, through a confusion, he thinks it within his own.

[1] Infra, § 320

14

12 Fyfield Road
Oxford.
22 Sept. 1901.

Since I wrote to you I have been to Glasgow as representative of the Oxford Philological Society—of which I am this year President—and I saw some very distinguished people, among them Lord Kelvin. I was interested to notice that his face confirmed my impression of him as a man devoted in the most singlehearted way to his subject, mathematical physics, and utterly unable to see beyond it. It is amusing to see how the math^as bow down to him and attend seriously to the extraordinarily naive utterances he delivers on the philosophical side of his subject. He seems to me a mere child in such matters. Have you noticed the worship of the 'mighty atom' in the British Assoc^n. Rucker (I suppose it is the same man) delivered once a lecture in Oxford on 'Action at a distance'. It was indescribably funny—such elementary ignorance about the nature of the question he was dealing with One could have reduced him to the most artless contradictions (within his own limits) and I was strongly moved to do so but hadn't quite the courage. It was some years ago. If it happened again I think I *should* have the courage now I was glad also to see and speak to Professor J. B. Mayor of Cambridge, who is one of the most learned and accurate men of his generation and I think one of the most honest.

So from the end of June till now I have worked at the Greek tacticians like—the best bishop—you know what I mean. . . . I wanted to get my work into ⟨the⟩ shape of a treatise before the vac^n is out I daresay I shan't do that especially as the continuous application is beginning to take it out of me. But I hope certainly to publish my results reasonably soon. The thing was really too tempting to neglect. I hope my friends won't despair of me when they hear that the promised ἐπαγωγή is *not* ready for I think scholars will think the work I turned aside for worth doing. . . . I haven't published my address [1] on the nature of one's conviction of the existence of God: and I have generally thought it best not to lend the MS. because

[1] Infra, §§ 565–82.

it is not adequate to what I actually said. It 's too much of the nature of notes for an address. If you are very anxious to see it however perhaps I had better let you have it—that is when you have really time to read it—you would be more sympathetic than a stranger and perhaps know what I was driving at even when only indicated. But then I am afraid it would be necessary for me to make additions to the last part or even rewrite it to make it clear, for being pressed much for time I couldn't write out at all properly the very end of it but that didn't matter for my address, for it was the most important thing I had to say and I was in no danger of forgetting it. But I haven't seen it for a long time and I don't know how much I should have to do at it. If it was fairly much I could with the present preoccupation of my ' pint of brains ' (would it were at least a quart!) hardly put myself back in the right position just now at least. As a matter of fact I should like you to see the argument (though I should infinitely prefer that you had heard it—' the letter killeth ') and so later on I shall see if I couldn't make the latter part fairly intelligible to a reader. I trust everything is prospering with you. I am very glad to say that the place I was at in Yorkshire (Ravenscar) suited my wife better than most places we've tried. For which I am very thankful. . . . We were counting up to-day the number of *eminent* specialists she has been to and found them *nine* at least. But I am beginning to hope that she really will get much better. She can tricycle a little, it suits her better than walking.

With kind regards, yours truly.

15

St Edward's
Islip, Oxon.
3^{d} May 1902.

It is perfectly splendid. I can't tell you how glad I am. Your cup of happiness is getting pretty full and I congratulate you with all my heart. I wish I had a daughter myself, I should have adored her: and it 's a blessing to a boy to have a sister. My own sister whom I lost when she was 30 was the light and blessing of our household. She was sweet and adorable beyond words.

My mother says it is so nice to have a little girl first and I am to tell you that. But I expect these things are relative, that most mothers prefer a son, if the idea of preference is allowable, and most fathers (apart from the artificial prejudice in favour of a son and heir to maintain the family succession) prefer a daughter.

I always thought it so touching that Victor Hugo should present his little grand daughter with the words ' c'est ma petite grand'fille que j'adore '. I can so enter into his feelings. . . .

How very good of you to write to me at once about your good fortune. I am afraid, by the by, that you will have been pursued by a letter from me about defaulting Cyclists. I didn't know you were off. To-day (Friday) I am in ISLIP and sleep also, as my mother's condition has begun to give cause for anxiety. With very kind regards to you both and hearty good wishes.

Yours truly.

I'll tell you about my interview with old Poste when I see you. He was calm and cheerful. Did I tell you I tried diameter myself at first as *δοθεῖσα γραμμή*. Thanks for date of Butcher's solution Bywater with whom I spent yesterday evening is rather épris of my solution and wants it published [1]

16

Recluse Lodge
Freshwater, I.W.
8 Aug. 1902.

We are truly sorry to hear that you have lost that noble dog [2] It is well that he did not have a longer illness—poor fellow. . . . I do trust the little daughter is getting on better and that you have no anxiety about her. I didn't deduct anything from the account you sent for I do not know what the ' At Home ' cost. We can settle that next term. We are resting here, only my friend is very fond of discussions and, as he is an invalid and doesn't often get such a chance, I have to humour him. But it is tiring sometimes and I shall try to keep the thing within

[1] Plato, *Meno*, 86 E, *J. of Philology*, xxvui, pp 222–40 (1903)

[2] Rafe Bernard, one of the noblest of a noble breed. Buried, by kind permission of His Grace the Duke of Bedford, on his estate at Aspley Guise.

limits. You will miss Rafe sadly, but it is well that the little daughter had arrived and with her and with music and gardening (which I think delightful) you and Mrs. —— should have a pleasant summer. I have brought here my Vergil and my *In Memoriam* with Bradley's commentary, which I shall greatly enjoy. I had already read some of it. The weather has been deplorable but our friends are charming. My friend's daughter is a good musician and plays the 'cello well. I may confess I never felt so old, but I trust the feeling will pass—it is depressing. With very kind regards from us to you both, yours truly.

17

To BERNARD BOSANQUET.

22 June 1903.

. . . The reason I did not publish was that tho' Boole is the fountain there has been a good deal of development of the thing in Germany and I thought one must attack the thing as a whole. Consequently I got Schröder's book—a frightful thing to tackle and there I stuck because I was obliged at the time to turn to something else and I have never had the time since to read Schröder. I contented myself with giving a public lecture[1] in which I endeavoured to show. (1) that merely as a calculus it went on a wrong principle, not recognizing that a symbolic calculus must be developed *from* the particular *matter* it relates to; ⟨whereas[2]⟩ they are forcing the matter into algebraic symbolism, as if the latter were the only possible; (2) I shewed that as a calculus it was involved in a contradiction which mathematicians as such must admit to be such—violating the principle of algebraic calculus as such; (3) I shewed this latter not merely verbal or formal, but that by it the identity of the extension of any class could be proved with that of any other, e.g. if A and B are class symbols, as they are, then the equation A=B can be established *whatever* A and B represent; (4) I pointed out some minor fallacies; (5) taking the calculus on its own merits (as ⟨intended⟩ to solve certain kinds of problems) I can verify my first point, about fitting the form and the matter, by producing a calculus of my own of exceedingly simple

[1] See §§ 371–400

[2] 'when', original

character, which is suggested by the nature of the problem to be solved. It solves[1] with ease and simplicity all the problems attacked by the symbolic logicians whose calculus is in comparison very cumbrous; e.g. Boole's methods require, for such complicated problems as Dodgson used to devise, an extraordinary amount of working and quantities of equations, whereas my method does the business quite easily These complicated problems do not appear in Boole or his followers at all. Elimination from 12 or 20 (e g) premisses of a number of terms. Dodgson used to make them and I have many in the unpublished 2nd part of his book, of which he sent me proofs Dodgson had a method resembling Boole's in some essentials. but of course he had ⟨the⟩ advantage of *making* the problem. Dodgson was astonished, as he freely said, at the way in which I solved all such problems and was able to shew him that he had in them superfluous premisses, or premisses one or other of which might be alternatively superfluous—things he had not found out himself. I never shewed him the method, for he died just as he was busied in the 2nd part of the book and I hadn't had a good opportunity. This 5th part I was unable to develop in my lectures (two only). Edgeworth, who is a disciple of Boole and all such, came to me after ⟨the⟩ lectures and said I had 'put pegs into Boole', but said also an important use had been made of Boole's calculus in application to *probability* . . . and I had better consider that carefully [. . .[2]] I hadn't at the time done this. A Cambridge friend of mine, who knew Boole's calculus well, told me he had never read this part and so, as he is a very thorough man, I supposed it of no particular importance. However I read it and soon found that the main theorems were actually false—false that is from a mathematical point of view. I suppose as mathematicians *as such* don't interest themselves generally in symbolic logic, these mistakes which are demonstrable beyond a doubt and vitiate all Boole's account of probability have escaped notice. There 's absolutely no doubt of the error, but as a confirmation I may say that I sent one of Boole's solutions to a distinguished mathematician (F. R. S.) and asked him how *a certain* result could be got. I didn't send

[1] The original has 'they solve'.

[2] A digression on the sad drowning of two Oxford men.

the working but the problem and its Boolian solution. He replied that he didn't see how it could be got—that is to say a certain element in the solution. Now I knew it couldn't be got for the problem presented *no data* for determining the element in question, which therefore must remain *in*determinate. Part of Boole's error, which is a most ingenuous one, consists in just giving a determinate form to what in the theory of mathematical probability couldn't have ⟨precise determination⟩. The curious thing is that his theory *sometimes* brings a true result and I had therefore to discover the reason of this and determine when it could happen. It took me some time but I did eventually find the reason and have got to the bottom of the whole matter.

This again I didn't publish because I thought it ought to go with the criticism of the Boolian calculus in general; which, for the reason given, had to wait and other things came pouring in upon me I think now, perhaps, it would have been well to have published the criticism by itself, it might have prevented such mistakes as B Russell's and certainly I should have destroyed any idea of Boole's infallibility by shewing the mistakes in probability which all mathematicians would admit. The more so as I hear from Edgeworth that recently considerable use has been made by some people of Boole's probability methods. There is another tremendous fallacy in the subject, the belief that the forms dealt with in 'symbolic logic' are general forms of all *inference* whatever. They are only forms of *syllogistic* inference and one can shew that mathematical inference *as such* is not syllogistic and that the supposed reduction of (e.g) Euclidean proof to syllogistic form is a fallacy. I have postponed reading Dedekind and Cantor's *Mengenlehre* for the same reason for which I postponed Schröder (as also Peano). In general the time I am able to give to quasi-mathematical speculation has been engrossed for the most part lately by a renewed effort as you know to find the kind of contradiction in more-than-3-dimensional space which would make me master of the situation, because it would convince the rank and file of mathematicians and thus they would at least not suppose the philosophic criticism, by which I intended anyhow to attack, somehow wrong.

I will take this opportunity of telling you that during the last three terms I have simply thought incessantly on the subject, so much so that I felt I was in danger of 'breaking' my mind for a time in it. It seemed constantly as though I had succeeded this time and of course the result of success would be so very important that it seemed worth while to strain every effort. The argument I sent you attracted some very considerable mathematicians, who studied it with great care, as well as some other arguments of a different kind which I did *not* send you. Later on some very good men disagreed with the others in at least not feeling secure about some of my results. The net result seemed to be that my mathematical friends had never analysed certain notions about movement in curves and so disagreed in their view of them and, when I pointed out certain consequences of their view, changed it. Now, for my purpose, a line of *mathematical* argument is of little or no use unless it is quite convincing to all, even ordinary, mathematicians, and so far therefore I consider my effort after all a failure. For it won't do to risk anything upon a doubtful mathematical demonstration. Even if one's philosophical criticism accompanying it was sound it would be suspected because of the suspicion of the mathematics This is what really happened to Lotze, who of course gave a great deal of time and thought to these things And his example is a warning to smaller people.

Of course I am sufficiently disappointed, as the attraction my view had for some very critical and clever mathematicians made me think I had done it at last and could begin now to put my views into print, more especially as I have almost worn myself out these 3 terms by incessant thinking, because it always seemed that I could get the thing into a shape which would convince all and ⟨I⟩ continually found again it came back to some point of the same disputable character. I have resolved therefore now to make myself no more anxious about this, but develop a criticism of the ⟨more-than⟩-3-dimension ⟨geometry⟩ directly on the books in which the theory is set forth I shall inevitably from time to time return to the cherished project, but I shall not devote myself to it exclusively, but rather think of it occasionally when there 's nothing else to do—in the train

or in the waiting-room at a railway station—and take my chance of a lucky thought or inspiration. However this prudent resolve is not all I have to shew, (1) I have made some new developments in 'queer' geometry, which will shew that I am qualified as an original thinker in the mathematical theory itself and so I shall get more heed to my criticism of it all; (2) I think I have got light at last on the relation of motion on the curve to motion on the tangent—the fundamental point on which my mathematicians waver and I think my result explains their different views and why they should waver. This I might communicate to you sometime when I am not writing a voluminous letter. I am absolutely under contract, so to say, to write on certain questions relating to Plato and Aristotle this vacation; but I have been asked by the philosophical coterie you wot of, to deliver a public lecture at least as soon as may be on these modern vagaries connected with symbolic logic (including Dedekind and such like). I may perhaps therefore take Dedekind & Co. to the Schwarzwald in the vacation, but as I must make the Greek a first charge I doubt whether I shall be ready with my public lecture by next term

I am sending you now herewith my criticism of the 'class of classes' fallacy As to Royce's theory, the map in a map, this again I haven't read but have had told me by such competent people as J. A Smith. *Prima facie* it seems a mere form of stating the familiar truth that, if we take any two magnitudes, no matter how much greater one is than the other, we can always divide them in the same proportion. The position of a point on the one map can always be represented by a proportion of certain magnitudes (coordinates and their relation to height and breadth of map) and the 'corresponding' point in the other map by the same proportion. And this really reduces to the simple truth that any magnitude can be divided in the same proportion as any other. One might just as well take a line and another which is a part of it, and consider a set of points determined in the larger and their correspondents on the smaller —just as well as take a surface (the outer map) and a surface within it I should be glad therefore to see your own criticism, dealing with the thing in detail. I daresay you could without difficulty send me the essentials of it. I would in return send

you a criticism of the fallacy reproduced in B. Russell's article concerning

1 2 3 4 5 6 . . . . . ad inf.
2 4 6 8 10 12 . . . . . ad inf.

[Here follows an unsympathetic criticism of Prof. Moore and of Mr. B. Russell]

I see I forgot to say that I found myself a certain difficulty in the argument sent to you which none of my mathematical critics discovered. I regret that I have unaccountably mislaid your kind letter, no doubt it will turn up, and so am answering from memory, yours truly.

18

12 Fyfield Road,
Oxford
30 June 1903.

I do hope you are better of that touch of sun. For your very kind letter very many thanks. I was *so glad* to hear the field day on Monday was such a success. By a happy chance the problem was the same that the Colonel himself set upon Saturday: so our men would have the advantage of that day's experience on the *same* ground and with same object. I congratulate you also on managing so well with the faithful few. Kindly remember me to all who care for the message and you may go down as low as lieutenants for the sake of B——. Mrs. C. W. is engaged in the arduous toil of getting me into the right clothes to see the Major[1] married this morning. Wir sind beide sonst etwas niedergedruckt.

19

Kurhotel-Schönwald.
Schonwald bei Triberg, Baden.
29 July 1903.

I cannot remember whether I wrote to you or not, but give you the benefit of the doubt. This place is really capital and I could recommend it if I were sure the rainy weather we have been having was exceptional and not normal. The hotel is quiet, comfortable and quite moderate in charges. Actual

[1] Now the Right Rev the Lord Bishop of St Albans

locality not striking, but good centre and fine views within about a mile. Between two centres of the clock industry, Furtwangen and Triberg. Triberg is very fine in its scenery. It doesn't suit my wife as well as I could wish. She misses the tricycle very much, as I feared she would. I hired her a bath chair from Freiburg, which has extended her radius a good deal. Yesterday I pushed her up a road with frightful gradient (45° as Dodgson might say) in a pelting storm of rain (which overtook us) for a frightful way. Thought I should be stiff all over this morning but am not stiff at all.

20

Hannover.
Sat. 29 Aug. [1903].

. . . I do hope you are better Perhaps what you want is a fortnight (say) of mere physical exercise and enjoyment of open air, carefully avoiding *any* philosophical or Academic work. I believe this *absolute* laying aside of work is often imperative in such a condition as you seem to be ⟨in⟩. It 's difficult, I daresay, but it *pays* We wind up our holiday to-night by going to *Fidelio* and expect a great treat We start home to-morrow. We wonder what the surprise is and hope it may be that you and Mrs. —— are coming to live in or near Oxford. Kind regards from us to both.

21

Oxford.
7 Sept. 1903.

We have just been having a solitary tea in our little garden which looks perfectly lovely. Oxford is now in the throes of St. Giles' Fair . My wife was noticing the other day how many suicides there are in the papers. For myself I am suffering from such acute nervous depression that I might think it alarming if I had not had it before now. We spent our last fortnight in Hannover: it 's a place which always has a most dismal effect on me (tho' such a beautiful town). . . . I suspect the strange weather has helped, it was simply stifling at first in Oxford I have got what I suppose to be the male equivalent for hysteria—sometimes badly. It makes me understand the

queer things that sane people sometimes surprise one with, for I expect they get into this extraordinary nervous phase. I may however myself count on being preserved from them, because I am conscious of the situation. It helps me also to understand hysteria in general. I am doubtful sometimes whether there is anything properly insane about it; whether it is not that one feels and realises things clearly and acutely, for instance, one's utter powerlessness and insignificance, also the loss and absence of friends and relatives,—too clearly for one's proper balance which is conditioned by a certain callousness But when it 's pretty bad I do think it is something like a conscious insanity. The feeling is, I think, the mental analogue of the misery (even agony) of sea-sickness. It 's worse than any mere physical illness and the effect of it I dread is inability to do any real thinking or reading. . . . I even seem to dread this mechanical work coming to an end, when I must face real work. As a matter of fact I have now—being the next thing promised—to write out my article on the points you wot of in the trireme, not a great mental task, the material all ready in the shape of notes, but I shrink from it. Also I have to keep up my study of Dedekind and Cantor, which I broke well during my stay in the Schwarzwald (that was splendid) but scarcely was able to touch in Hannover . . .

My wife has been also very depressed in Oxford (of course I can't confide my real condition to her . . .) . . .

22

Oxford.
17 Sept. 1903.

. . . I am glad to say I am *distinctly* better. I feel the worst is over and I am able to do some work. . . . One feels so much coming back to Oxford and not being able to go and recount one's experiences of travel to one's parents It 's my first summer without one of them and till last Easter[1] I had both of them My wife feels our loneliness in this respect very much, tho' of course it doesn't concern her anything like so nearly. . . .

[1] [viz. Easter 1902]

23

[June 1905]

I wish you had been at my paper on Friday or that I had been at your Inspection. . . . Fortunately I. B. was there himself. He was much pleased with my paper and said he ⟨had⟩ never seen the point put properly before. We made a night of it together after in the Randolph. . . . It wouldn't do for them of Ascalon to know the rifts in the philosophic lute and don't repeat to the philosophers either

24

12 Fyfield Road,
Oxford.
11 May 1904.

I trust that you have had a refreshing Easter holiday, and are now able to devote yourself to your studies again I want to report progress on some of the subjects on which we have corresponded. I am always moved by what Locke calls 'the most pressing uneasiness' and have had to deviate more than once from my study of Dedekind. However, one of my deviations has brought me to it again in, I hope, a useful way.

The 'Greek Music' carried me off first, for the thing seemed to work out so well and to be confirmed by further examination of ancient classical and post-classical authorities. I read a paper on it here which was attended by the Provost of Oriel and the Principal of Brasenose · and was greatly confirmed by the result. I told the Provost beforehand the new passage in Aristotle. I understand he came thinking he could dispose of it, though how he could I can't imagine, as it certainly is obviously fatal to his own view. However, I revised all the classical evidence, without the Aristotle, and I think satisfied my audience that the modes differed both in interval and pitch. I then showed that the Aristotelian passage confirmed this, and from it alone one could get the kind of theory I advocated. Monro hardly made a criticism. Heberden thinks he realized the Aristotelian passage couldn't be got over, and indeed I had led up to it by showing that there were other important passages which couldn't be got over and had been misinterpreted by the Provost and others. It was a feature of my theory that one

recovered a quite simple and natural interpretation of such places. I was told afterwards, that the Provost had been greatly impressed. Well I started to get this ready for the press, when I read an article upon *Eth. I.* vi, in connection with the Idea Number theory by one R. G. Bury in the February Classical Review, which turned out a still more pressing uneasiness for it gave me a great opportunity of saying something on the *ἀσύμβλητοι ἀριθμοί*, upon the Idea-Number theory, and on Plato's philosophy of Mathematics—things (some of them) which I have given in lectures I had by me for years, but had no occasion to publish. The article in question showed that there was really need to say something. So after patenting the 'Music' by a short abstract of my paper in the Classical Review (it will appear either in May or June) I gave myself to the new work This took up a good part of my energies in the Easter Vacation. I have written and indeed printed, for the proofs are finally corrected, a long article entitled *ἀσύμβλητοι ἀριθμοί* for the Class. Review. This will probably, or a first instalment of it, appear in the June Class. Review. I used the opportunity to give two 'Public Lectures' in Oxford on the subject, and am glad to know that I gained the adherence to my views on the Platonic and Aristotelian questions involved (mainly in Aristotle, *Metaphysics*, Plato, *Republic*; *διάνοια*, et id genus omne) of the kind of people here one wishes to convince. The reason why I may suppose this to interest you at all is that *ἀσύμβ. ἀρ.* led me to give a deliverance on Dedekind which I have put in a foot-note. It relates not to the book 'Was sind und was sollen die Zahlen' but to 'Stetigkeit und die irrationale Zahlen'. I am clear now that the attempt to introduce continuity into 'number' itself comes from a fairly ghastly mistake as to the meaning of 'the number *two*', 'the number *three*' etc. etc. that I am sure about, but I think that I have made it very probable that it was from a very accurate understanding of what these expressions do mean, that Plato or a Platonist got the conception of *ἀσύμβλητοι ἀριθμοί*. This I have put forward in my article, and have chaffed the modern metaphysico-mathematician for a mare's nest constructed from fallacies the Platonist saw through long ago. I have through the comparison of 'parallel versions' in the *Metaphysics* shown, I think, that

one writer in the *Metaphysics* particularly wished to dissociate Plato's name from the later 'Idea-Number' theory. This same writer *does* associate Plato with the ἀσύμβλητοι ἀριθμοί, and it is one of my points that it arises out of the earlier Platonism and has nothing to do with the later Idea-Number theory as such. I have also given an explanation of the τὰ μεταξύ for Mathematics, which I dare bet you will approve, and I think I have shown it a great mistake of interpretation to think any such doctrine in the *Republic*. This I think *inter alia* disposes of some of the great nonsense H. Jackson talks about Plato, but I had no occasion to name him, as the essentials of the view I traverse are a mistake at least as old as Ueberweg.

I will send you a 'deprint' of the whole thing when I get some. I might have got on to my 'music' in the vacation but was interrupted by two claims on me. Lady Welby *insisted* on my giving a set opinion on her book, and I had to read it nearly through I knew already enough of it to see it wouldn't do, despite her cleverness, and would gladly have declined the task but she wouldn't let me off. I broke the result gently to her and had a very charming reply. Again a friend bringing out a rather good analysis of the *Ethics* for pass men (the pass part) submitted it to me and I spent a good slice of my time in writing and argufying about that. So you see I haven't been able to help myself ('bin wirklich sehr unschuldig', what you once kindly quoted) One absolutely can't avoid these things, and it is only now that I am going to begin to get the Greek Modes ready for press Fortunately now it is simply a matter of straightforward work and can be got through almost mechanically. I don't think I can interlard Dedekind with it (much as I wish) because I have got with help of notes of pupils to rewrite my commentary on the *Posterior Analytics* (delivered about one and a half years ago) as some of the tutors are good enough to desire very much that this should be done, and I must use these notes while I can keep them. Meanwhile I itch to go for the other Dedekind books, I really believe I can do for it, but I know I must get the 'music' out of the way first. I saw with interest your review of Moore's *Ethics* in 'Mind'. As I haven't read Moore and am little likely to, I have no right to opinion but you seemed to me to say just the right thing,

and what is perhaps a good deal harder to do, just in the right way. I asked a very capable Oxford tutor if he had seen it and what he thought of it, and I found he was very pleased with it and thought it remarkable that you could manage it at all, considering the amount of your lecturing work.

I have not been afraid of writing about my own work, not only because I know you are so sympathetic, but because I want you to understand I have not let go the investigation which you think [it] rather a duty for me, though I haven't been able to give it first attention, and also by explaining what has hindered me, to show that I was really justified in leaving it for a time.

You yourself have no need I expect for any such 'apologia', you manage to go straight forward and finish off important pieces of work.

I do trust you are all right and vigorous. For my own part I seldom had such a good Easter vacation.

I was at a lovely Sussex village standing on the Downs four miles from Arundel and within easy ride of a very dear friend, an old Oriel pupil, a most interesting young artist with such splendid ideals. He lives on other side of Downs near Amberley at a place called Bury—if you happen to know the neighbourhood. My friend's name is Wethered. He has now a picture in the New Gallery—if you go tell me what you think of it, I haven't seen it. Some of his work is very successful (I think) and certainly is all very imaginative—some of it I don't like, but he 's uncompromising and sticks to his principles. He 's gone on landscape but *can* draw figures wonderfully. He made a pastel of me, which I think is very fine vigorous drawing, and the critics here agree. There 's a good show of portraits from the Colleges here now. You may see an account of it in the Burlington Magazine by Blakiston.

25

22 May 1904.
12 Fyfield Road,
Oxford.

(i) *ἀσύμβλητος* means 'not addible' as is abundantly proved by Aristotle's discussion in the Metaphysics. I suspect you were thinking of *ἀσύμμετρος*.

(ii) You say on the universal of number 'It is clear . . . that twoness cannot be added to twoness and make fourness; *but* twoness must involve some sort of structural relation to fourness, I should have thought'

I don't follow the 'but'. What it introduces is no objection whatever to what precedes it. Don't you rather mean that you are accustomed (or perhaps we are all when not reflecting) to think of the structural relation of two to four as the construction of Four by the addition of two Twos, and that as this clearly wont do (for you agree I have shown that) since by Four the number Four is meant, a *new* question arises What *is* the structural relation of Two to Four, if any? How ought their relation to be represented? What is there in the relation in virtue of which three comes in the serial order between two and four? If I have got the real meaning of your difficulty clear, I think the answer is also clear.

I have pointed out that the proposition 'two and two make four' means that any particular two added to any particular two makes a particular four, or two particulars added to two make four particulars. Two means always two *of*, twoness is twoness *of* (cf. Aristotle's definition of *ἀριθμός* as *πλῆθος μεμετρημένον*—which is very suggestive, as all his sayings about number and magnitude are).

Now that any particular two added to another makes a particular four lies in the nature of Twoness and Fourness. This seems to me the simple answer to the question about structural relation I imagine proposed. You may say that if one group of elements has twoness and the other also twoness, they constitute a group which has fourness, but I think the more natural language the best. So again as to the serial order:—The serial order 2, 3, 4, corresponds simply to the fact that the nature of Twoness and Threeness and Fourness is such that a particular

three consists of a particular two with a particular one added to it, and that to get a particular four another particular one must be added to the particular three.

Thus it takes two steps of the same kind to produce *a* four by addition to *a* two, only one such step to produce *a* three by addition to *a* two and only one such to produce *a* four by addition to *a* three. These productions accordingly form a series: and in the serial order the production of the particular three comes 'between'—in the sense explained—the production of the particular four and the two (or the production of the two).

This is the simple meaning of the order of 'the series of natural numbers'. The order 2, 3, 4 does not mean that the numbers 3 and 4 are formed successively (one before the other) by the addition of the number one (=oneness) to the number 2(=twoness), and of the number one again to the number 3, which is mere nonsense, but that a particular three and a particular four are produced *successively* by the addition of a particular one to a particular two and the addition to them again of a particular one.

May one not compress the principle which explains all these things into this statement?—'Just as squareness has not got four equal sides etc. but is the having of four equal sides, so twoness is not made up of two units, but means the being made up of two units.' I think the key to all the fallacies and confusion can be got from this.

By the way, you would, I suppose, agree with my criticism of Dedekind, for his theory of Continuity depends precisely on the fallacy that the number four is a *magnitude* differing from the number three as another magnitude by one unit.

(iii) As to διάνοια—I intended to write but think it best to take one thing at a time, so will put off till I hear from you about the above. I will only say that I feel pretty sure that when you have reconsidered what I have said with Plato's text before you at leisure you will agree with me I can't pretend that I think there can be really two opinions. The objection you make seems so directly dealt with in what I submitted to you that I think it might be merely enough to ask you to look at my argument again when I can send you a deprint.

I am sorry you didn't agree at once (the criticism I should

have rather expected was that it was not at all new to you) but am not exactly surprised: for my experience has shown me that it is often more difficult to convince acute people about something very simple than on a difficult point, especially when they have got biased by some current view. You quote our friend Stout as apparently agreeing with you in doubting my interpretation. I might also quote my Oxford audience if we are to count heads (as 'heads'). Some of them, of course, have given very special attention to the question, and I felt sure they were (some of them) in favour of some such interpretation as Ueberweg's. There was a moment when I saw I had captured them—one notices these things in an attentive audience—and it was when I challenged any one to say whether they could make anything of διάμετρος αὐτή and τετράγωνον αὐτό—assigned in the most definite way by Plato as *the* object of διάνοια—except the ἰδέαι of these geometrical elements.

And I saw also the point fully taken and appreciated that the origin of the fallacious interpretation was the confusion of διάνοια with the faculty of mathematical investigation—whereas μαθηματική like διαλεκτική was a process 'outside' the four faculties I found out after people *were* convinced.

I will only ask you for the moment to try a method which I find it useful to fall back upon when I can't make headway with what I believe the simple, obvious, and necessary meaning of a passage in Plato or Aristotle.

I ask those who, I believe, are maintaining an unnatural and artificial view to try the experiment of putting what they believe the meaning of the text into *the Greek* which they think would best and most clearly convey it. The comparison of the result with the text tells its own story, and it becomes evident that Plato, humanly speaking, couldn't possibly express himself as he has done if he had intended what was attributed to him—especially when as in the present case the expression he actually uses would convey naturally the very opposite of the supposed meaning.

I pointed it out in my lecture that when we satisfied ourselves of the absolutely necessary meaning of Plato's making the objects of διάνοια the 'originals of which the phenomena are copies' and the αὐτὸ τετράγωνον etc., that point of interpretation was irrefragably fixed and we must not mind what difficulties Plato got

himself into afterwards by his distinction e.g. of διάνοια and νοῦς. It would be a great mistake to alter the necessary meaning of the Greek because of any such considerations—the confusion if any would be Plato's look-out. But I contended, and satisfied people, there was no such confusion and Plato said something perfectly intelligible

The fact is the distinction Plato makes between the object of διάνοια and νοῦς is one which in essence appears within mathematics, and no doubt was suggested to him by mathematics it is simple and not difficult and nobody really following the text and understanding the thing in question in mathematics, and not confused by the Aristotelian passage, could have two minds about it.

I will explain this later and put the answer to your objection again and more at large than in the printed article when I next write, unless you prefer merely to wait and take another look at the article.

Joachim has been giving me an amusing account of a debate with Stout at St Andrews. From what he said I have a suspicion I should have been in essentials with Stout Some things Joachim said seemed right, but I can't help thinking that if he had put them properly they would be found in agreement with Stout's view. But I may be quite out of it.

Yours truly,
J. COOK WILSON.

PS. I hear Stout is not bringing his little boy when he comes to Oxford, that seems rather mean.

26

13 November 1904.
Oxford

'An anxious inquirer' this Sabbath morning who, though a young student (a B A) and not an 'expert' in mathematics, though he knows a decent modicum, is convinced of the nonsensical character of the construction of space out of an aggregate of points and has been attacking this effutition as represented by B. Russell (in a College Society), has brought back to my mind a matter which I ought to have written to you about long ago

You will remember my writing to you about that (in my

opinion) rather foolish fallacy of B. Russell's about a class being a member of itself. I showed by an artifice how the game could be played with any class, and emphasised the fact that it was a mere fallacy of language. You weren't altogether happy, because you didn't, I think, altogether see what I was driving at. But later I put the theory on what I must think a sound basis in writing to Stout. There remained, however, one difficulty in Stout's mind, which roughly came to his accepting a very fallacious verbal mistake of Russell's, in fact that a *class as many* could be distinguished from a *class as one* and (ultimately) represented as a member of itself.

These things provoke me for, though they depend on fallacies of mere language which I am obliged to think very childish, they are insidious if people aren't accustomed to analyse forms of expression—and so many, even logicians, are not I therefore sat down to a determined effort to drive the hobgoblin out of Stout's mind, and took great pains to get all clear. Stout had fought determinedly but this final effort convinced him absolutely (that was long vacation 1903, I think) I should like you to know this in case you had thought there was anything in the thing · and it drives me wild that these mere muddles of language which annoyed Plato and Aristotle so much in the petty and trivially clever debaters of their day, should reappear at ⟨all⟩, after all philosophy has done, and actually be mistaken for something the least worth having.

Russell's fallacy may be refuted in a line or two, thus ·—

A class is a unified manifold of elements A member of a class is one of the elements so unified To say, then, that a class is a member of itself is to say that a unified manifold of elements is an element in the same unified manifold of elements.

(The peculiar way in which the members (elements) of a class are unified doesn't matter, one only need use the part of the conception which is sufficient to show the fallacy) This being so the fallacy can only be due to some verbal error and the remainder of one's work is to show what the verbal error is, which has made it seem plausible. I think I did that, but for mere refutation⟨'s⟩ sake the above is enough.

Yours truly,

J. Cook Wilson.

27

[To a schoolmaster in reply to the words 'Learners generally find a difficulty in Trigonometry from the fact that a revolving line only has a sign in 4 definite positions and is regarded as having no sign in all other positions There seems no way (in elementary Trigonometry) out of this difficulty except *convention*']

(? 10 Feb. 1905.]

⟨Such an answer would never do, for the following reasons:—⟩ Nothing in the way of truth can ever be settled by 'convention', though all the elementary books speak as if the use of + and − for direction was, as you said, just a convention. All convention can do is to settle what symbols shall be used for a given idea, we can invent the symbol and 'agree' (convention) to use it, we cannot invent the idea. For instance we may have the convention that ÷ shall represent division That is absolutely all convention can do. This as a general principle is quite self-evident, but we can bring it to the *reductio ad absurdum* test, in a particular instance, easily. For instance, if we tell the boy the use of + and − for two opposite directions is arbitrary and a convention, he might reasonably say: 'Well, if + doesn't itself mean direction, what right have you to use it for direction? It is a sign of a certain meaning or idea, viz. *addition*, how can you make it the sign of another meaning or idea without confusion? Either you are using it as having a different meaning from addition or you are not. In the first case, why on earth don't you use a different sign as the meaning is different? In the second case (i e. if you don't use it as having a different meaning) you are obviously making a mistake.' And he might involve you in the *reductio ad absurdum* by saying 'Good! If it is mere convention, we might just as well use the sign of multiplication for one direction and the sign of division for the opposite direction (× and ÷)' There could be no answer to this upon the convention principle and you will find at once, if you try and in the ordinary co-ordinate system substitute × for + as a sign of direction and ÷ for −, that it won't work the least bit, but you will get quite ridiculous results. Try it: I have. I am not saying *what* the true answer is but only pointing out the futility of the convention answer, which we all alike have been taught.

May I add to the support of my imaginary schoolboy that, after he says + must mean one thing or another, he might go on to remark that he actually finds in trigonometrical examples before him + used in the same example both for sign of direction and sign of addition. Heaven save you for the present from the imaginary boy!

Note again that in co-ordinate geometry you may see no difficulty in an equation like $y = mx + c$. You will substitute for y, as representing a co-ordinate, $-b$, say, and calculate the value $\frac{-b-c}{m}$ for x as a co-ordinate. But what happens when you have a product xy? To begin with, this represents no co-ordinate with *direction* at all, but a rectangle. How can it have a sign *at all*? And suppose we give x the value $-a$, and y the value $-b$: then $xy = (-a)(-b)$. How can we say that the two minus signs of *direction* can produce a plus sign. How could they be *multiplied*? And are we to say that the resulting + sign (if we take the algebraic rule) is a sign of *direction*?

⟨To consider now, so-called *imaginary* quantities⟩. The mistake in people like De Morgan is to suppose they have to look for an 'interpretation' of $\sqrt{-1}$, where it does not (or could not) represent an impossibility, misled by the analogy (not rightly understood) of those problems which give -1 (or some number with $-$ sign) simply in the answer and thus shew the question of the problem has to be answered in the negative, while the same $-$ quantity in *another* reference would give a positive answer and express a possibility. For instance, if you ask what will be a man's gain under certain conditions and working the equation find it $= -3£$, the simple meaning is that he gains nothing at all and further that his failure to reach gain is measured by $3£$. If now you ask what he loses, you get the answer $3£$. The first answer shows it is *impossible* he should gain and how far he fails: the second shows that he actually loses and how much.

Now we want $\sqrt{-1}$ explained, so far as it represents an impossibility. Any interpretation of it as representing something *possible* and founded on a really different calculus and symbolism is quite irrelevant and a false use of the *loss* analogy. The true parallel is that the $\sqrt{-1}$ answer, like the -1 answer,

gives a definite measure of the impossibility. In the profit question, -3 shews, so to say, how far the transaction fails of being possibly gain. The $\sqrt{-1}$ answer shews also a measure of how far the thing fails of possibility. For in an instance ⟨of⟩ it, a difference like a^2-b^2, which ought to be positive to give possibility, and the magnitude of its negative value, i.e. of the value under the root in $\sqrt{a^2-b^2}=\sqrt{-c^2}$ shews how far it is off possibility. In the case of a circle for instance it shews how far a circle comes off reaching a given line which it does not reach, as can be easily seen from a figure. If r is the radius and d the distance of the line from the centre, then the y co-ordinate of ⟨the⟩ point of intersection $=\sqrt{r^2-d^2}$. And r^2-d^2 gives the exact measure of the impossibility, when it is negative, and accordingly gives a distinction between one circle and another (e g. of same centre)—the very (definite) measure of the impossibility, varying from one circle to another, actually seems to define and determine each circle. It is quite simple d being constant, the value in question of the 'degree' (shall I say) of the impossibility determines the corresponding value of r and so the circle [1]

28

[Oxford]
20 June, 1905.

You asked me what Bywater thought of my views on *Κάθαρσις*.[2] I have been to see him to-day with a result both amusing and unexpected. As I anticipated he does not think of giving up the 'purgation' interpretation of the passage and apparently does not dispute my analysis of the metaphor of purgation so applied I should have thought that nothing remained but to admit Aristotle was wrong, and badly. But Bywater seriously holds that Aristotle is right because this is all that can be said to *excuse* tragic representation on the stage. Plato was right, he says, it is wrong to have tragic representation at all. From the point of view of the moralist and the politician this titillation of the emotions ought not to be permitted (these are Bywater's exact words), Plato's view being right, the only possible *excuse* for performance at all is that given by Aristotle, says Bywater, to let off, purge off these undesirable feelings.

[1] Cf § 116, p 268

[2] See p lxxi, O P S, under 1905.

From further conversation, after this remarkable deliverance, I gathered Bywater thought that tragedy only gratified (from the ideal point of view) a morbid liking for seeing and hearing horrors. Ideally it shouldn't be gratified at all (so Plato), but, if at all, only by way of harmless outlet and purgation (Aristotle).

I feel the wicked mirthfulness of the slave in Plautus (or is it Terence?) who 'mixed things'. I have driven some into bad translations or fantastic creations quite away from anything in the *Poetics*, or into that confusion of metaphors I prophesied, and Bywater I have driven into the arms of Plato. He certainly developed his adhesion to Plato's view of the drama *after* my criticism for, when I first told him my difficulties, such a solution had not occurred to him. I think I may leave the people who disagree with me to deal with one another. I have got views written down for me by various people and J. A. S. has expounded *viva voce* the positive side of his view (he agrees, you know, with me on the negative side) to me lucidly and energetically. I have not had time to study thoroughly the *written* papers, I have been too unavoidably busy with other things: but everything I have yet seen or heard, whether by itself, or setting opposites against one another, confirms me in the view I advocated in my paper and in my impression that there was a deplorable confusion of ideas on the subject You said you had heard some things which seemed to shake my position. I wanted to ask you what they were but haven't had the chance. Don't write, I'll wait till I see you.

N.B. Miss Gwyer, for whom I wrote the essay out of which I developed my paper, is very properly delighted at the rumpus.

Yours

29

5 Granville Place,
Portman Sq.
W.
3 Jan 1906.

The *Morals of Marcus* makes a good play, if well acted and it was well acted. Carlotta was played wonderfully well by Miss Carlisle. . . . I had read the novel but had forgotten even that I had read it. Of course it came back to me as the piece developed. If I had known, I hardly think I should have gone.

The book produced a painful impression on me. The writer has committed what is to me the ' unpardonable sin ' against human nature. Mrs. H. Ward has done the same thing in the *Marriage of William Ashe*. . . . The novelist first creates a lovable character perhaps with some eccentricities (in order to palliate the offence he, the writer, intends to commit) and then makes the character do something horrid (something simply disgustingly wicked when looked at honestly) in order to make a sort of affecting tragedy. What is done would be quite impossible for any real person with the character the novelist has depicted up to the false and criminal step. It would be impossible for any person however *stupid*, if they had any feeling, any ordinary sense of duty, whereas the heroine (I observe this class of writer doesn't take this sort of liberty with a man's character) has been represented as having a lovable nature—very sensitive to obligation and at least with tender and refined feeling ! On the other hand it would be impossible for any person without any decent feeling if they had a little ordinary common sense. And yet Kitty in Mrs. Ward's novel is very clever and Carlotta isn't a mere fool. In short to make the tragedy at all possible the person would have to be an idiot *both* morally *and* intellectually. The trick of shocking the reader is mere vile vulgarity and always makes me furious. Human nature is poor enough but it is a great deal better than that. It is therefore to my mind profanity as well as vulgarity In the case of the present novel or play the writer has not only been vulgar but stupid. his own representation has made what happens particularly impossible. One very marked feature of Carlotta's is the innocence and naiveté with which she tells *everything* to ' Sir Marcus ', her flirtation with the grocer's boy for instance. Obviously the first thing she would have done would have been to tell Sir Marcus how kind, how very kind Lady Mainwaring and Pasquale had been, that the former had explained to her she couldn't marry Sir Marcus (and so he couldn't save her from the Effendi that way) and P. had been so very kind as to promise to take her safely away out of reach of Hamed. The author has indeed written himself down an ass as well as a vulgar profaner of human nature. You will never find anything approaching this in any great master, it 's modern decadence and love of paradox.

George Eliot, who harrows one's feelings profitably, would never have made such a blunder. Just think of her women. The verdict of the common public on such things is that they are 'unnatural' and the verdict is right, only too merciful. The cleverness of the writer in making us first love his character is no excuse, because he simply prostitutes himself (I mean it) to produce an effect. . . .

30

[Oxford]
Feb. 9 [1906].

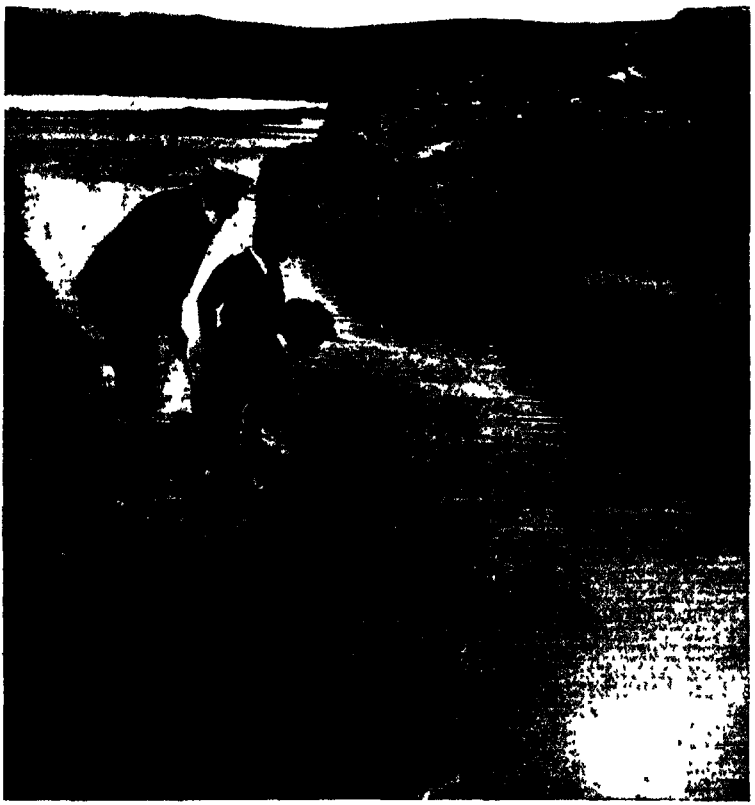
—— tells me you were maintaining that there were *duties* which couldn't be claimed as *rights* by others and that R. opposed this. You may like to know that this is my view, communicated often to pupils when I was a tutor *à propos* of the question of the difference between acts of justice and generosity. The view is the direct development of the theory of the right of the individual maintained in my *Republic* lectures. Duties I distinguish into those whose performance can be claimed as a right by others and those where it cannot. The former constitute Justice. Their performance is *not* according to [the] use of language called 'meritorious', their violation *e contra* is a crime and justifies *compulsion* and punishment (see *Rep.* lectures). The performance of the other is accounted meritorious and is the sphere of generosity as opposed to justice. It 's a demerit not to perform them but not a crime. (Not a good augury for R.'s book) Kind regards to you and Mrs. ——. My conduct has *not* been good enough for me to appear before my 'dual control'.

31

New College.
19 Feb. 1906.

I am touched by the joy of my dual control at my 'decoration' [1] and I hope it will propitiate them for a time at least. I hoped that hidden away in the University Intelligence of *The Times* it would not be noticed, for no people doing their duty in term would be likely to see it; and I think few, if any, philosophers have seen it except yourselves. But when people

[1] Hon. LL.D. at St. Andrews.



J C Wilson playing with Mr Prichard's sons

See letter no 70

take in *The Times* as their domestic paper and then lie abed unemployed one is not safe, for

Satan finds some mischief still
For idle hands to do.

I wouldn't be so affected as to ask you to hush it up, but I don't want attention drawn to it unnecessarily. It really has not the value such an honour ought properly to have and mean [sic], that one's achievements are appreciated in the outer world It only means that Bosanquet and Stout have a high opinion of me, that I knew already, and I value it far more than the degree. The only thing of real value from the outside of oneself is just the estimate of such people and of one's colleagues here. As to the degree itself, it is, as I have said to Bosanquet, the first instance, as far as I know, where the affection of my friends has jobbed me into a dignity and as such it delights me immensely I was sounded about it something like a year ago and I said I thought distinctly such things were only appropriate for people who had published books of a certain (considerable) thickness and were not in my way at all Seriously I do think that people who brave publicity are those to whom such honours are really appropriate Otherwise you encourage the merely local reputation which is the danger of the greater Universities. (Have I not already offered it as a sop to my monitors?)

The children were delightful the other day You don't get to know what children really are till you play with them and see them play with one another. Some of my little friends do not stand the test as well as I should like. But I can say without flattery that yours do. I did not know Charley very well before but I think him a delightful child after seeing as much of him as I did yesterday

With very kind regards to both of you, yrs truly.

PS. I simply can't come to teas this term—at least not yet. I am bothered about my lectures next term because it is exactly the time when I ought to lecture on a number of difficulties left over in the *Posterior Analytics* and I am not ready. I have continually yielded to the 'more pressing uneasiness' and so put it off. I can't risk advertising it because it is quite possible

I may not find time in the Easter vacation As I have to go to Scotland for the degree on April 3d I may take my wife to see Edinburgh and stay a short time with a friend in Glasgow, who has sent a pressing invitation, and this doesn't look like time for work. I am very unhappy about it, because the Summer term is just the one in which I ought to give this lecture

32

[Oxford, ? June 06.]

. . . I am grateful both to you on whom far more work devolved than upon the men and to the men themselves who certainly worked under great difficulties and drawbacks.[1] Well, give them a jolly good dinner on my part on Monday and say how much I wished I could be among them. They are stunning chaps even if they haven't won. . . .

He is perfectly and exceptionally capable of doing the work but apparently has some sort of kink in his mind and just 'bucks' as some of these clever people will. What a lot of good it would do such creatures (God's creatures after all) to come into camp—just a little ragging, for which we could acquit everybody all right, would be most salutary. Figure me going to-morrow and trying to coax this fractious ass of a genius with μειλιχίοις ἐπέεσσιν when I should like to ——. . . .

Really I am a person of little readiness of mind, the Col. presented me with a cucumber (or ½ one) as field-marshal's staff at luncheon. What an ass I was not to put it in my pocket! He would, in common honour, have had to pay and my wife would have been most pleased with me, as economical Hausfrau, for cucumbers are dearish this year.

33

Redfern House, Bosham.
[19 April ? 1905.]

Utinam me una tandem re nunquam imitatus esses, dico κακογραφίαν. Litterae tuae novissimae vix legi possunt. You might have kept ⟨the⟩ Bradley letter till term.[2] There is *much*

[1] Extract from a long letter about a competition (Wolseley Cup) at Bisley.

[2] A letter from me on Mr A C Bradley's criticism of Shakespeare Wilson thought at this time that he had improved on Mr Bradley's theory of the Tragedies Letter to A C.F., 27 III 05 (not printed) This letter is out of order

force in what you object but there are reasons why I did not take the obvious and simple interpretation: and as I am *sworn* foe to interpretations which are too subtle and ingenious you may suppose I have special reasons. These are best not detailed in a letter, we will talk them over. You perhaps do not remember enough that Hamlet is an inhabitant of the same kind of world as *Ophelia*, when you talk of a 'sterner' age than ours. Valde dolemus quod uxor tua, nobis conjunctissima, justo tardius convalescit. My article on Odyssey XXIV has appeared in *Classical Review*.[1] Printers made awful hash of my article in *Mind*.[2] Stout is penitent—not *my* fault.

34

Bad Kreuth,
Bavaria.
13 July [1906].

. . . My wife is disgusted with Kreuth. We began with sultry thundery weather which is for her the most trying thing of all. Then suddenly mist and rain and cold *November* weather. To-day we are just shivering about. . . . Fortunately for me there 's a nice young fellow here named Franz who was about 10 years ago learning English in poor Abbott's house in Oxford. He went an expedition with me the other day involving a climb to the saddle of the Plauberg (otherwise Blauberg). The climb turned out extremely steep and in one place where we had to scramble over a scarp of naked rock the track practically disappeared. There was a glorious crop of gentians at the top. I read in the guide book (*afterwards*) the path was called 'über den Fels' and was 'nur fur schwindelfreie' Fortunately I am 'schwindelfrei' in a most desirable degree. There can't be much the matter with me for my young companion was much more pumped by the ascent and begged me to stop and give him breathing space. He remarked that I was evidently 'very well trained' (he meant 'in good training') and expressed his surprise, when we got back, to my sister-in-law on my walking and climbing powers. I attach importance to this incident

[1] *The Classical Review*, XIX, pp 144–7.

[2] On the strength of this and of internal evidence I have included the article in *Mind*, N. S., No 54, signed W., in Wilson's works

because through my other 'Beschwerden' I had begun to fear that I had entered a period of permanently diminished vigour, which considering the work I have before me had been causing me some anxiety.[1]

Today I have got the proofs of my Monro memoir from Berlin.

Kindest regards from us both to you both.

35

New College.
28 Feb. 1907.

I understand the difficulty. It looks as though one ought to try to do some recruiting in some of the Colleges. We can talk about that when we meet. We might have a short pow-wow in certain selected Colleges. It 's a pity the Cyclists are not better supported and it 's rather hard upon you because in the last two years the work of the Cyclists has been on a *much* higher level than it ever has reached before . . If you like I could draw up with you a short statement of the nature of the work of the Cyclists which could be sent to captains of companies or other persons influential in the matter of volunteering. It is clear to me that the difficulties of recruiting have increased a good deal from the causes you mention since I left the Corps (except that cause which is among what you mention, courteously, but really it isn't that!). Of course I was not finding fault with you, I am not so blackly ungrateful.

36

Monday.
[20 May, 1907.]

The letter . . . proved to be of the distressing kind I feared. . . . I should like to come and talk to you about it, for though no very decisive step need be taken at the moment I feel as though I should break down if I couldn't confide the main things to somebody. . . .

If you happened to come here and there was some one else in the room you could say you wanted to talk to me about something and when we were alone you could say first some-

[1] Part of this letter is printed in Part V.

thing about the Cyclists or any other subject. If I don't see you before I should like to see you Wednesday, I suppose my best chance to see you (or Tuesday) would be after 4, but it may be very difficult for me to get away. My wife will want me to tea and be afraid of my being out too late. Would there be any chance of finding you in about 2.30?

Bywater's public lecture is 2.15 (I think) to-day.[1] I am afraid no chance of my going. By irony of fate, another of my letters was to say I was recommended for election to the British Academy: but I am in such trouble I can't appreciate it. Please do not say a word about the Brit. Acad. to *anyone* (except of course Mrs. ——).

Many, many thanks.

37

Villa Taunus, Ems.
4 June (and after !) 1907.

. . . At Cologne where we spent the night. . . I thought it best to go and have a restful time in the Cathedral and was glad I did. I found it had lost none of the charm it had for me when I was younger. It is wonderful what an effect such architecture can have upon one, it is so calming. Such lofty vaulting as that of the aisle and choir at Cologne, with such light and graceful forms, is sublime without being oppressive, it is the sublimity which encourages and lifts one up in a manner sympathetically to itself. A service was just concluding without music, but the responses of the congregation had a very beautiful effect: the vast echoing spaces transmuted the sound till it was no longer like human voices but like the breaking of waves heard at a distance. One was far enough from the congregation (Défense de circuler pendant l'office !) to get this effect. I wanted to renew my acquaintance with the choir chapels, partly to see some beautifully carved woodwork figures in high relief on ⟨the⟩ altar-piece and partly, as I thought, to see some Flemish pictures by Memling and Kranach. But my memory played me false in both respects. I suspect I was thinking of some other church seen since—possibly at Bruges, for though I found a magnificent carved-wood altar-piece, it was not in the choir but on the east

[1] *The Erasmian pronunciation of Greek and its precursors* (published 1908).

wall of the S. transept and the figures were not what I had in memory, really far better. [Here follows praise of the altar-piece in Radley School Chapel.] . . . I doubt whether you would find anything better in any continental church and it will transport you in imagination to Flemish and German medieval churches. . . . In the 'Three Holy Kings' Chapel there were some very beautiful figures of the 14th century (the above is dated 1520) but they were ordinary detached images (the three 'kings' and I think two other images) and apparently they had been put into the altar-piece in modern times—the altar-piece itself being by a modern Dutchman (and excellent). The aforesaid very large altar-piece—sort of big triptych or tetraptych—in the transept came out of a destroyed church.

As for the paintings there was no Memling or Kranach but to compensate, the famous picture of the Adoration of the Magi (not in their chapel however) by Stephan Lochner, 15th century. It is triptychal, the colouring is very beautiful and the faces and figures are quite out of medieval stiffness and almost modern. It is in wonderful preservation and is said to be the picture mentioned by Albrecht Durer in his journal of his visit to the Netherlands. How thankful one must be for these great painters and one is so glad to think the names of the quite early people are not forgotten (Lochner was from Switzerland but had settled in Cologne) and also that the names of the first architect of Cologne cathedral and of his successors are also preserved. It is delightful too that the original sketch of the towers and W. façade has been recovered (they say part of it was in Darmstadt and the rest in Paris) and is to be seen in the Cathedral

June 9th. I intended to send this off days ago but my time is taken up by my medical exercises and resting after them and writing *necessary* letters (I wrote 7 postcards yesterday and I write every day to Mrs. Wilson, she is often so lonely especially as her knee prevents her from walking).[1] I must also count the music which is my principal resource. I listen to that from 4 to 5.30 every day and generally take a good walk between that and supper. After supper there is another concert, generally the best in the day. . . . I chose a train which gave me a little more than two hours in Cassel, for I wanted to renew my

[1] He had left Mrs Wilson at Göttingen.

acquaintance with the picture gallery there.[1] It contains some fine Rembrandts. One of these is the celebrated picture of his wife Saskia. . . . The picture is fine enough but what he saw in Saskia I don't know. Even he has not succeeded in making her look interesting. . . . Much more interesting are several portraits of himself, one very fine. The most celebrated is, I believe, a large picture *Jacob blessing the sons of Joseph.* It is a fine thing but rather monotonous in colour for Rembrandt. There are also some splendid portraits of various people by him. I was happy to find quite a nice landscape, *The shore of Scheveningen* by Adrian van der Velde. That 's the man of whom I have an original landscape drawing over the mantelpiece in my study. His métier was to put the cattle in other people's pictures, e.g. Hobbema's, and so one doesn't often see a whole picture by him. There is also a splendid and well-known Van Dyck, *The painter Snyders and his wife* . . . also some gems by Metsu and Ter Borch. . . . Cassel itself is worth a visit ; it is ideally situated and has a delightful old-world look, just an ideal of the old-fashioned capital of a German principality. There is at least one fine Titian and I was much struck by a small cattle piece by Paul Potter, it seems a sort of preparation for the famous *Bull.*[2] There is the same wonderful rendering of the glossy hides of the cows and of their horns but still it is far behind the famous bull, the cows are more like single studies beautifully detailed just put on the same canvas, whereas the *Bull* is a fine composition. By the way there is a curious picture of Rembrandt's, celebrated and I daresay you know it but I had forgotten it. It is called *The Woodcutter's family* and is supposed to be a *Holy* Family. It seems an absolutely Dutch interior, very delightful are the mother and child ; the father is dimly seen a little distance off, perhaps through a door into a shed, chopping wood. . . . I came by chance on quite a beautiful picture by Antony More : perhaps you remember that one of his was about the finest in one (the first I think) of the exhibitions of College pictures in the schools. It would delight the heart of Woods, and doubtless has delighted it for he is sure to

[1] He had visited it in 1875 in company with Miss Margaret Wilson and probably later.

[2] He had admired this when visiting Holland with Dr. C. L. Shadwell in 1892.

know the Cassel gallery. The amiable custodian, who was with me, told me there were other Mores but I hadn't time to look them up. The line hither passes Marburg . . when I first went to Gottingen 1874 I went that way—its situation is most romantic, the buildings delightfully quaint and medieval. The town seems to pour down the semicircular side of a high hill into the Lahn. The configuration of the hill occasions the most picturesque situation for the buildings. I always think it one of the sights of the world and compare it to Innsbruck, which also is built high and low on a hill—but *it* is rather at the foot of a mountain. I fancy Marburg must be an excellent place to philosophize in. Leyden I always think another, Leyden so wonderfully still and remote from the world. You can imagine people there wrapped up in classical scholarship or philosophy, as indeed its great men were, a place from which physical science would be banished as mere 'stinks' Gottingen was, but Gottingen, I feel, *fuit*. It has grown tremendously. The suburb where my wife is in a nursing home was utterly unrecognisable, fine handsome houses grossstaedtisch [*sic*] in fact and the idyllic countrifiedness of Gottingen seems gone for ever. It seems only appropriate that the principal philosopher should be a psychophysicist. Nevertheless the old town within its 'Wall' (the latter, which used to surround it and was a favourite walk of mine, is levelled now in many places but the site of it remains as a sort of boulevard), not so very much altered, is now a kind of kernel of old-fashioned medieval-like buildings, surrounded by large suburbs with modern buildings. It makes a sad impression on one, the simple charm of the old place is gone, the time when it seemed *all* University. By the way on one house outside the 'Wall' I saw a tablet with the names of Brahms and Joachim. Ask Joachim if that was his uncle. I certainly don't remember to have seen it there 'in my time'.

This place (Ems) is delightful. . . . The position, on the Lahn, is just wonderful, steep rocky hills go sheer up from the river which has delightful windings. These hills are well wooded and there are delightful walks to the tops of them. . . . One of my greatest delights is the fine band. It plays to us from 7 to 8.30 while we are drinking our waters, but I don't get much out of it then. There 's a fine concert in the afternoon 4 to 5.30 when

we have our coffee. They do play well. One feels it is so *accurate*. I always think it greatly contributes to the pleasure of music to see the quaint or beautiful shape of the instruments. A fine trumpet polished like gold, the quaint bass viols and the 'cellos with their delightful golden brown colour. The Dutch painters felt this you can see, for they delighted in beautiful painting of the lute and other instruments (Ter Borch, Metsu, Van der Meer). *A propos* there is a *Lady playing a lute* by Ter Borch in the Cassel gallery, and a Metsu where, besides a lute played by a lady, there is a fine coloured 'cello lying on a table, which the painter evidently delighted to paint.[1] That is the weak side of the modern piano. The *Grand* is simply an ugly instrument, unless you happen to see right on to the key-board, which is its redeeming feature. Do you know I think the earlier people felt that, and that is why the spinet, clavichord &c. were so often highly decorated, mainly with pictures, even inside the lid so that when it was raised to give more sound (as in the modern grand) there was a delight to the eye. I believe they felt the artistic difficulty and that was their way of getting over it. I distinctly remember this brought out in Dutch pictures, where the painters represent the spinet or harpsichord, decorated in this manner. I remember one quite clearly (but not the name of the painter) in which the open lid of the spinet or harpsichord shews the picture on the *inside* of it[2] The music here is a great solace It prevents me from feeling too lonely. We had a Wagner Abend the other day, it was splendid. Of all the Wagner I know I like the Tannhauser music the best and especially the overture with the wonderful Pilgrim melody Don't you think that it is characteristic of Wagner's style to have the melody principally in the tenor or else baritone. I believe much of his peculiar charm is due to this. But I must stop now so that I may stop somewhere. Kindest regards to both of you.

J COOK WILSON.

PS. Once more a thousand thanks for all your kindness to me and care of me

[1] Cf. Metsu, *The music lesson*, Nat Gall, No 838

[2] Perhaps the writer was thinking of Vermeer's *A lady at the virginals*, Nat. Gall, No 1383

38

18 June 1907.
Villa Taunus, Ems.

Your letter was a Wohlthat (which means, for otherwise you are sure to misconstrue, ' a refreshment '). Yesterday I wanted you badly, remembering our visit to Beverley. As I came here I saw two Romanesque churches, from the railway, in most picturesque positions and I visited them both yesterday afternoon. . . . One is the cathedral of Limburg on the Lahn. The description of it ought to make your mouth water. It is built on the top of a rocky eminence descending in sheer walls of rock to the river, which curves beautifully at the foot of it. The town itself climbs up the other side of the hill to the cathedral. The town is itself most picturesque, all sorts of crooked and narrow Gassen, such quaint houses and buildings. The whole reminded me of Albrecht Durer's beautiful landscape backgrounds, the quaint buildings he loved, and just this pile of architecture—church or castle on the top of a sharply defined rock. It is an extraordinary emotion to find what one is only accustomed to in pictures and of a long past age, and so belongs to the dream side of one's life, actually still existing in all its quaintness and beauty. One wonders if the people about belong to the past too in their ways and dialect. And it was with a sort of satisfaction that I learned that the people in the village similarly dominated by the second Romanesque church were almost exclusively Catholics How wicked the artistic sense can make one I must tell you a story of old Bodington of Lincoln *à propos* of this. He came once to stay with us when we were at a place on the coast of Picardy We were in the cathedral in Boulogne where there is a famous statue of the Virgin, which came down from heaven on to a boat (I think). There happened to be a pilgrimage from some of the neighbouring villages to see it · mainly women of course, on some sort of festival. It was a pretty and a touching sight. Old ' Bod ' (bilious Bod was his Oxford title) said . ' and we have lost all this by our beastly Protestantism.' I won't guarantee ' beastly ', but it was either beastly or ' words to that effect '. He said it quite seriously without a wink or a smile but looking quite cross. You see he wasn't master of his artistic feeling. Yet he wasn't

even a ritualist at home. I didn't dare to chaff him and I might have died of the inward bleeding of suppressed chuckles. Of course it meant a want of the sense of humour (aren't you profoundly thankful you have a sense of humour? It ought to be accounted a virtue, for it saves the virtuous from being prigs).

The Limburg cathedral, date about 1218–42, begun just before Cologne, is architecturally most fascinating; it is built in a transition style from Romanesque to Gothic. The main outlines of the building are Romanesque, the usual pair of high W. towers, two small towers at the end of each transept with the usual Romanesque gables and diamond-shaped roofs to them, and a central conical tower [illustration], which I guessed to be an imperfect restoration and I learned afterwards that this tower had fallen in;—*seven* towers in all. It was curious to see these seven towers (besides their Romanesque windows) decorated with pointed Gothic arcading. The effect at a distance was fine, the Romanesque quite dominating; but near at hand it had the effect of degrading the severity of the Romanesque into mere quaintness and the Gothic shewed itself the truly beautiful as opposed to the quaint. Inside, the church was all thoroughly transitional, capitals sometimes *purely* Byzantine, sometimes of the type of the Early English decorated capital [illustration] and the same shape as opposed to the squatter Romanesque. Here and there were striking features of Early English such as this [illustration]. Then there was a triforium, a thing unknown I suppose to Romanesque proper, rather a shallow one with Gothic arcading. instead of the flat expanse of painted wall below the clerestory of a Romanesque church. The main pillars showed the same transition to Gothic as you may observe in the four pillars at the junction of transepts, nave and choir in Christ Church.[1] Finally, everything was painted in the Romanesque fashion. This one saw was the mistake, it did not suit the graceful Gothic forms introduced, even if the colour had been better, but made them look tawdry, at least deprived them of force. It was well one had Christ Church in mind (more like this than Beverley) for one saw how

[1] viz the Cathedral Church in Oxford. The writer is not quite correct about the style and date

really beautiful the combination would have been, if left in pure uncoloured stone. The whole thing was full of lessons and you will realise I could hardly get out of the place. One could see the spirit of architecture struggling into the beauty of 13th-century Gothic, and of course in the light of later achievement it *seems* strange (tho' it really is not) that once the improvement began it hadn't got the Gothic outline everywhere as at Beverley. By the way, in the arcading of the triforium the shafts of the pillars appeared to be black marble like Beverley and the nave of Gloucester, so *that* feature appears. Under the triforium what I may call a gallery for want of remembering the technical name (Emporen is the German) runs all round the church as in Nôtre Dame and the shafts of the middle pillars of the corresponding arches were black, painted the custodian said and I verified [illustration]. In Christ Church there is a beautiful combination of Romanesque (note especially the very beautiful and severe capitals in the choir) and Early English but it appears there to be a *combination* proper, due to different times of building, in different styles, but in Limburg it is transition proper, the elements being combined from the first. One lesson it teaches is the great beauty of the fully developed tendency in Beverley and the great beauty of the analogous combination in Christ Church, for interesting as Limburg is, it is far inferior in real beauty to these other two. The choir had an apse and a deambulatory—the latter very like Malvern Abbey-church. It was severely beautiful from the outside, with a pretty sort of gallery near the roof (arcaded) and *two* strong, simple, unadorned flying buttresses I tore myself away from this to go to Dietkirchen, a village about 1½ miles off direct and 2 along river bank (Lahn). This was a similar picturesque situation A rocky eminence with village clustering about it—one side sheer precipitous walls of rock and the summit crowned by a pure Romanesque church —no transepts and only two towers, the usual two western, those very high with a severe and noble effect, dominating the landscape in a striking way because just here the valley widens into a plain, so that the isolated rock with the high building upon it is thrown into extraordinarily bold relief. You will remember this sort of thing in Durer's (and others') pictures, where it looks exaggerated. The church, supposed to date from

the 11th century (and it looks the part), is very solidly built. The aisles are vaulted so that the 'galleries' above them have stone floors. Painted all over inside, quite right, but if the colours had only been better chosen it would have looked infinitely better (this is the place where the people are all Catholics). The two towers are united near the top, *high up*, by a covered bridge, at quite a fearsome height. The diamonds of the roof of one of them were sharper than that of the other—it 's not merely my bad drawing [illustration]. The towers and indeed the whole building were of a beautiful bluish grey. How wise the Church was to build in this imposing way. It was the necessary set off to the castles of the savages we call the knights of the middle ages. It must have powerfully impressed the imagination in those rude times I should have said that the ecclesiastical foundation of Limburg dates from about 800. There is a beautiful effigy of the founder, of the 13th century, about contemporary I suppose with the cathedral, the features in style just like those of the New College statues (over gate on both sides and founder's tower).

What a pleasing picture you draw of your father. . . . Yes, *Sewell* was what I should have said They know nothing at Radley about the carving except that they think it came from Cologne. I am sorry to have to tell you that Mrs. Wilson seems rather worse than better. . . . I have heard of a capital place in the Harz—a Kurhaus in the forest and I hope to cheer her up there. I shall be able doubtless to get a chair to wheel her about in as I did in the Black Forest and I hope she will forget her troubles [1] . . . Kant says somewhere, I think, that 'imitation has no place in morals' This is quite true as meant, but it has always struck me that as a telling practical precept the very opposite is true. When I am considering how I *ought* to behave in certain circumstances (I really do consider sometimes), I find it far better than any maxim or precept to think how so and so would have behaved in similar circumstances. One realises the thing then properly, and it is really the best corrective of one's natural impulse and want of self-criticism. Thus if I am

[1] He goes on to speak of his election to the British Academy (on which I had ventured to congratulate him) and of Bernard Bosanquet's charming letter about it, 'hardly to be beaten for tact and courtesy.'

getting, I feel, out of temper in a debate, I think how Sanday would behave in similar circumstances—that is, of course, when I *do* stop to think about it. And when I feel my defect in the ordinary courtesies of life, I pull myself up by thinking how, e.g. Bosanquet or Strachan Davidson would behave. The ' voice of reason ' is as a nothing to be compared with the memory of such incarnations of it in others and I am sure it is one of the best safeguards in any man's life. At first one is too proud to do it, but I have got over that. As to studies of peasant life read Auerbach's Barfüssele (Little barefoot) and tell me what you think of *that.* It 's not long and it is most restful and I think beautiful. . . . I should love to hear from camp, but you *mustn't* write if you can't get it in, I know how it is there.

N.B. I am anxious you should give up either your infantry cy. or the Cyclists—one at least if not both—you can't stand it. If Lattey takes Cyclists, I would help a bit. I hope to come back much better. . . .

39

Sunday July 7 [1907].
Johanniser Kurhaus bei
Zellerfeld (Harz).

Though I owe J—— a letter a long time I must write to you first, for I am not comfortable about your work It seems obvious you should *not* have begun on the Kant so soon after term. I know the importance of sticking to a piece of work like that, if it is to be got through—and the work of a tutor is so entirely engrossing during term, that in the vacation one must stick steadily to a thing even against the grain sometimes, remembering that the ' term cometh when no man can work '. But it was clearly imprudent, considering what you did at Easter, to start on such a hard subject as Kant when term was hardly over. As I said I suppose it means you must in consequence of other vacation arrangements take the time for work. Of course it 's better to arrange to have two or three clear weeks of rest and recreation after term. But if you had to take your main holiday later, then nevertheless you ought to have had at least a clear week after term and *then* only done *routine* work,

such as College business or lecture work or reading. You really must believe me about this. You will do your work *all* the better if you wait till really fresh for it and certainly get *more* done too, if you have the self-restraint to wait a fairly good time after term. If you're at the Kant still, I should venture to take the risk of advising you to stop it.

As to your experience now, undoubtedly if you take the kind of view we seem agreed upon (at least in essentials) of the original source of confusion in Kant, the more his theory is carried into details the more confusion it will naturally shew,—that is only to be expected. As to *style*, I trust you will take to heart what I said on my postcard. In order to be quite clear in your thinking, your expression *at first* must be just what is natural to you, or you won't really say what you mean. Of course what you don't like is the labour of writing the thing twice over. Now I will confess to you. I generally write first a rough draft, then I begin to write out as for print. but presently I begin to think or rethink and sometimes seriously alter, and then there has to be a second rough draft. Then I try to make certain that the third ⟨is final⟩ and it often is *not.* Looking back on the various articles &c. I have printed, I came to the conclusion that I generally write a thing *four* times by or before the last version,—a thing which would frighten me if I realised before it was to be so. Each time I try of course to have fewer revisals but generally it comes to the same thing. For you (as for anybody) I am sure the first one or two versions should be in the words and forms of sentence most natural to you. Don't be *afraid of repetition.* IF you mean the same thing, say the same thing or you will really get altering your argument. In the final form you can use literary devices to overcome the verbal repetition. I am fairly sure Aristotle wrote in this kind of way—more especially that if a word was the right and natural word in the present context, he kept it though he had used ⟨it⟩ just before in a different sense appropriate to the previous context. Of course a mathematician never thinks of varying the phrase, because he wishes to be absolutely accurate. I repeat that you should certainly not look at the MS on Universals if the thing is at present off your mind. I only left it with you because at one time it was worrying you

I am sure now I don't want to see it myself till I come back to Oxford. The simplest thing is—if you will be so kind—to leave it in my college room in any drawer of my kneehole table which happens to be open. I am glad you have done corresponding with ——. I know what weariness that sort of thing can be. [There follows an account of the failure of Mrs. Wilson's clinical treatment at Göttingen. He fetched her from Hanover]. . . .

This is a charming place (we came here last Tuesday) and I hope it will do her good. But the bother is that her knee is not well and it prevents her walking except the tiniest distances; so she is kept to the vicinity of the hotel—which however is very charming and I suppose about 2000 feet above sea-level. I can recommend this place. The hotel is charming, countrified with spacious verandahs for coffee &c., plenty of public rooms, excellent and abundant food . . . lovely scenery in the midst of firwoods and forests, remote from human habitation, delightfully quiet, such a sense of rest about it—nobody rushing about to see things. The society quiet, domestic, middle-class Germans of a superior sort. . . . Also Professor Fick is here, the distinguished comparative philologist (retired); as he was at Gottingen we have common points of interest to talk about. His wife and my wife too were girls together in her native place in the Luneberger Haide. As for me, though otherwise very much better, my cough is not gone but the doctor thought it certainly would go later. My great worry is that my wife doesn't get anything like the enjoyment she ought because her knee confines her to a narrow area Previously I have always had a 'Bathchair' (light) and wheeled her long distances, but this time she won't hear of it, though really it is excellent exercise for me. I do hope J. A. is relieved of anxiety about his sister; there 's a man here who reminds us a good deal of him. . . .

With kindest regards from us both to both of you and love to the children, yours truly.

40

Hannover. Ellernstr. 2.
1 Aug. 1907.

It was so kind of you to send me a card here. We leave Monday Aug. 5 and hope to be in Oxford on Aug. 7. My wife picked up a good deal in the last ten days in the Harz in general health and her knee at last gets distinctly better. The gout in her fingers got very bad indeed and she is here trying a new electric treatment which has certainly had remarkable successes. I take her twice a day for the treatment, which may be described as getting certain gout remedies directly into the fingers from the outside (instead of through the stomach) by means of electricity. The inventor was confident he could cure my wife's fingers in 10 sittings (for which we just have 5 days), but so far his anticipations have *not* been realised as to rate of progress and a good deal of pain is caused. The treatment is fairly expensive and I confess to some anxiety now about its success. Weather bad again after one or two fine days, on one of which we left Gaslar [sic]. I renewed my acquaintance with Gaslar on the way. The last Harz week I made ⟨the⟩ acquaintance of ⟨a⟩ delightful German officer on the General Staff who had spent the last month in England with Sir John French, &c. I had rousing good walks with him. I must tell you about him later. In the Harz the birds suffer from the multitudinous squirrels. As to cows, distribution of their breeds follows distribution of races (Fick told me), e g. in Tyrol, the Slaves, the Germans, Italians &c have their original breeds of cows. You will enjoy the famous beauty of the Italian lakes

te, Lari maxume, teque,
fluctibus et fremitu surgens, Benace, marino.

Let me have a card again soon; affectionate remembrances to both.

41

Hannover.
Aug. 3 [1907].

I was very glad to get another card from you here—I needed it. The gout treatment seems a failure and therefore also a serious waste of money. I am so sorry, for I had hoped my wife had at last found something to give her relief. Yesterday

came the very sad news that her only surviving brother, the painter, who had been for years in America was dead. It was a shock to her. . . . I forget the *Wages of Sin*, tho' it interested me much at the time. But I do trust you don't read English books when abroad! L. M. always struck me as an *effective* writer.

42

Hannover, Ellernstr. 2.
7 August [1907].

My wife has had to go into Hospital with diphtheria and we may be delayed a week or ten days. She is going on all right. I have written to ask Mrs. —— if she would look in at our house as the house-parlourmaid (good hearted but headless) is there with a new cook and a new boy!! She might kindly help the headless one, if in difficulty. . . . If you are not at Oxford it does *not* matter.

43

Hannover. Ellernstr. 2.
7 August [1907].

There is no end to our troubles. My wife's expensive 'gout cure' seems absolutely to have failed. Moreover we were to have left yesterday (Tuesday), delaying a day on account of the cure, but my wife got an attack which the doctor pronounced diphtheria on Tuesday and the same night she had to be removed to the hospital. I was in an agony of fear because the doctor said it was rather advanced or, at all events, the white 'skin' in the throat was extensive and he was clearly anxious. We ought to have sent to him sooner but it seemed a mere inflammation of the uvula at first. However she is doing well, the serum was injected last night and this morning she was, rather to the surprise of the doctor, without fever and apparently the white membrane has disappeared (two doctors testified to its existence last night). I was the more frightened because she always takes the worst possible view of herself—this of course impedes recovery and is serious in such a dangerous matter. She was quite overcome when she went away and said she knew she should never come back. But that is all different to-day. 'Joy cometh in the morning.' I have been to see her twice and the second time took joyfully a scolding for having bought her

a book to read which she considered a waste of money—especially as she supposed all infectious patients' books were burned. She was also very afraid of the hospital after her experience of Gottingen, but she is *very* well cared for and most fortunately the head-nurse in her department is a great friend of my wife's nieces here. It is troublesome that the hospital is fairly expensive. All expenses are covered by about 17/- a day, which no doubt is not really much compared with England, but our expenses have rather mounted up this vacation. [There follows much about going to see the house-parlourmaid, with the new cook and new boy.] . . . You can imagine what trouble we have had in the house about disinfecting, especially as my sister-in-law with whom we are staying has seven young girls in her house who go to schools, and German regulations are strict. . . .

44

Ellernstrasse 2. Hannover.
22 Aug. [1907].

Your kind letter has cheered us. I regret to say that there is no immediate chance of our travelling. My wife came out of hospital on the 13th, but soon developed after-effects (apparently) of the inoculation and has taken to her bed. She had such pain in all her limbs. Now it seems to have settled in the knee which was bad originally. She suffers *such* pain when she stands that, after fruitless efforts to be up and use the limb, she has had to go back to bed and wait to see what complete rest will do. Of course she is in the doctor's hands. We are in a pitiable plight. I had hoped to settle to steady work in Oxford by the second week in August and I really can't do here the philosophical work which I am upon, One is so dreadfully unsettled. I long too to be back to our house and garden, it is just the time of year for it. We are much in the way here, for my sister-in-law was preparing to go to America and she sailed on Tuesday! On the 1st of September a young lady returns who occupies one of the rooms we have and a deplorable hugger-mugger must result if we are still here, for if my wife had to go to a Clinik again, I think she'd go out of her mind. They are touchingly kind to us in the house and do all they can for us. Another trouble is that the Kaiser comes next week

and so, if my wife is not well enough to travel *before*, we should be delayed, for the trains will be too crowded for us. Please ask Spenser to let me know when the Hertford fellowship is, as I have promised to examine. Hannover disagrees with us both, so our enforced stay is the more tantalising It was so kind of you to go to our house so soon. Kindest regards.

45

Ellernstrasse 2. Hannover.
28 August [1907].

. . . Many thanks for your very kind letter. I hoped to start on Friday or Saturday, but my wife is now suffering with a floating kidney trouble which comes and goes intermittently and she is afraid about starting We all here have no doubt she ought to make up her mind to start: it 's a good deal a matter of courage and nerves but we don't like to tell her. It is just about the last straw to me and I don't know what'll happen, if we don't get off this week It 's all I can do to bear up at all, and I have begun to suffer from ⟨a⟩ very disquieting feeling of pressure on the brain, like what I had after strychnine poisoning. Perhaps I'll write you a letter, but I want to get off this because of the question about ⟨the⟩ Hertford fellowship.

46

[Oxford]
13 Nov. 1907.

We will consider the return of my MS. after the turmoil of term is over. Perhaps you won't forget about it even if I do.

. . . I was sorry to miss you but see no prospect for the present of having time for a talk. I am examining for the John Locke and for B.Sc. I do hope Mrs Cook Wilson will let you examine for me in the former next year. Many thanks for the kind message from your wife. One of the compensations of age is that one's lady friends send their love to one. Some of mine are quite reckless in the way they *transmit* such messages. I will tell you an amusing example when I see you.

I have thoroughly sifted ——'s case, interviewing all kinds of people . . I will tell you all about it when we meet. It was an interesting study of *evidence*. Everything proved according to my view, before I got the unexpected ear-witness. . . .

47

[5 Granville Place, Portman Sq. W.]
26 Dec. 07.

It was one of your kind thoughts to send me a letter of goodwill this Xmas. These things are a great help 'in dieses Lebens Jammerthal'. Your letter suggests a delightful picture of domestic happiness which you and your wife so well deserve. But I miss one thing—you haven't told us about little Jane's Xmas pleasures, and what she said and did.

In the doubts and difficulties about good and evil in our lives, there is one thing which is most comforting and encouraging to me and that is that in so many young children tender and affectionate and even unselfish feeling is so *soon* developed. It does not come as the slow result of a long experience in which by repeated and painful effort a 'natural' selfishness is gradually overcome—something which needs much reasoning and reflection: but it is there almost at once—like a revelation. The feeling of gratitude for services rendered seems to us, by habit, so obvious as to need no explanation and it does not surprise us even in the animals. But how much *reason* it implies—the realisation of the existence of another personality, the attribution to it of agency, realising that some one else has done this for us and has caused it as *willing* it—and that this person also is well disposed to us. All this seems to me implied in gratitude for benefits received and yet quite tiny children are grateful. Besides, at a lower level, they are not merely pleased with what they get but they are quite obviously *pleased* (even if the feeling is not developed enough for gratitude) with those who have given them a pleasure.

It is a most encouraging thing for our view of humanity that quite the highest and best feelings and the amount of intelligence that they imply are found quite at the beginning and not as the result of careful thinking about experience—as a slowly learned lesson.

Of course the familiar rubbish about 'instinct' is no help and is a sort of irreverence to the human spirit. So far as there is any truth in it, it is an imperfect recognition of the fact that affection for others is primitive in the sense that it is underived

from anything else. It is indeed a rational emotion, reason's own immediate activity and undesired possession. You might just as well call the highest thinking possible 'instinctive', and it is 'instinctive' in the same sense. So you see the immense importance of little Jane—that mighty atom. We saw Marie Tempest in ——, a poor play but she was as excellent as ever. We dined with the C——s on Xmas day. Mrs. C—— and her two daughters are daughters of Anak. . . . Friday and Saturday we are hearing Wyndham and James Welch. Next week *Charley's Aunt*. . . . I hope little Jane got her *doll* all right (from Mrs Wilson) as well as the mechanical toy, *which* does she like best? I have no poetry for Jane this time (Joicey [?] calls it 'rhymes'!) for I have exhausted my vein in writing German verses to a delightful little girl in the Harz to whom I'm Onkel John. (I have brought Caird's addresses with me, you and your wife would greatly enjoy them) A painter friend of a Jewish lady friend of mine, who has long wanted me to sit for my portrait, has collared me at last and I am to begin sitting to-morrow (Friday)! The *painter* is first rate. My wife much plagued with gout. Both of us join in kindest wishes to you both, yours affectionately.

48

5 Granville Place, Portman Sq. W.
31 Dec. 1907.

It was so kind of you to write to both of us but one envelope and one stamp would have done—youth is so reckless. We are so sorry to hear that little Jane was so unwell, but it often happens after parties to children otherwise healthy enough. Please give her our love. We both send our hearty good wishes to you all for the New Year. Please tell Jane I was delighted with her pretty little letter and wish her a Happy New Year. She doesn't say what the castle was built of in which I was imagined to be.

The drier air in London is doing my wife good. She is distinctly better than when we came. I take care to wrap up well after the theatre—this is in reply to your husband's kind monition. This morning I took Miss C—— and Miss G—— to look

at the Rembrandts and other Dutch pictures in the National Gallery. The arrangement has been much changed in the last year ('new management') and I think for the better. E.g. three pictures of De Hoogh's, which I always used to compare with one another—two hanging apart in ⟨the⟩ same room and another in a different room, are all hung together. Artistically they are best in 3 different rooms and I think the *artist* would have preferred that: but for purposes of *study* one wants them side by side. But perhaps after all this is wrong as a principle of arrangement in a gallery, in fact on 2nd thoughts it seems possibly horribly wrong. However pictures of Ver Meer (or Van der Meer), Maes, Metsu, Ter Borch &c. are now brought into the same room, which seems both convenient and right. I suppose Jane would say it was no use putting good wishes at the end of the letter as they have been already expressed in the letter! Yours truly.

49

[Oxford] 29 Jan. 1908.

μηδέ μ' ἔρυκε μάχης φιλέων περ· οὐδέ με πείσεις.[1]

50

[Oxford] 8 Feb. 1908.

Confidential

The teichomachy[2] has an amusing sequel. You remember Murray abandoned the Jones, Brown, Robinson passage, though it is the one he quoted for ⟨the⟩ 1st year of War in his book and the *only* one. He told me he really meant to quote Ξ 32, *not* M 1–32. I had considered the passage myself and never imagined it contained any reference to the first year of the war, but I did not feel competent to deal with it decisively last night on such short notice. I have looked it up in Monro's notes (xiii–xxiv) Monro's explanation (which excludes ⟨the⟩ idea of

[1] *Iliad*, XVIII. 126, with *φιλέουσά περ*, of course Achilles to his mother, 'Hold me not back from battle, though you love me I will not obey.'

[2] The 'fight at the wall' was a debate on the 7 Feb at the Oxford Philological Society upon part of a paper called *On the Similes of Homer* read by Wilson to refute Professor G. Murray's 'advanced' views in Homeric criticism. It was a field-day with heavy guns; Sir Arthur Evans, among others, being present at least for part of the time.

1st year of war though he doesn't say so) is obviously right and entirely convincing. It explains also the *point* of the passage, which the interpretation of Murray's friends does not in the least. In fact the 'advanced' ones have misconstrued and badly. Just look at Monro's note. Godley agrees, he tells me, entirely with me about the Wall. He thinks, as I do, the supposed difficulties about its occasional absence purely imaginary. The whole wall argument, I think, including these precious *construcs, is a heartless hoax, due to a lying dream sent by* Zeus to the advanced ones.

From a remark of Murray's to me after, I gather he was under some illusion about your remark to him about the way Mill's contradiction could be explained. I suppose in such circumstances a man naturally thinks hastily a *new* point hasn't been noticed by his opponent and *therefore* is in his own favour. Of course the contradiction can be explained—I thought I had given the explanation myself—and I *did*, only I didn't dwell on it. I thought of working it out quite clearly last night but didn't want to waste time, as it didn't matter.

Obviously *all* these contradictions have an explanation.[1] The first thing is to establish their *existence* empirically: one then explains them, and *not* by the rational workings of consciousness as I abundantly indicated. So in the 'first over the wall', I offered an explanation as to how the poet could get confused over it. In fact this is the 'fighting in the dark' which the advanced school do not understand You were doing this when you offered an explanation of Mill's contradiction to Murray, but he didn't realise that.

The *valentines* haven't appeared in the shops yet.

Yours truly.

PS. Godley said he thought I 'had' Murray generally, because he (and even more the school he follows) depends upon contradictions, despite what he said—indeed he shifted ground (gracefully), for the view specially criticized depended *wholly* on contradictions.

[1] See 'Natural anomalies in original composition', *The Classical Review*, vol. xxiv, p 118.

51

Oxford.
7 April 1908.

It was very kind of you to write, for I felt when you left that two guardian angels had gone off duty. I saw Jane in the street the day you left but haven't yet paid her a call . . .

Thank you for the view of Wells. I have never been, and always hope to go there and to Glastonbury. It looks very attractive in the picture. I go in to see Caird sometimes: he came here this afternoon—a lovely day it has been and the buildings looked wonderful in Oxford. My head is distinctly better. Yesterday I had headache until about tea-time but to-day there was none and the oppression was *very* much less. I could have done some work I am sure this morning, only I had a good deal of business out of doors which I naturally put into the morning. Indeed I have idled all day, for I mowed the lawn this afternoon (it was very nice to do in the sun, I delight in the smell of the cut grass too, it 's refreshing) and after the Cairds were gone, I had to go out with my wife on business (to look at kitchen ranges, as we have succeeded in getting our landlord to contemplate a new one for us). Joseph is here for a few days. In the latter half of the day, i e after tea, I have been able to work fairly, but it 's frightfully hard stuff I am thinking out. I have been ' stuck up ' nearly a week on one point, but I have at last got light, I think. . . . My wife also is getting dreadfully nervous about the trouble of going away the last week to Woburn Sands. If however she gives it up, I must go away a few days myself—probably to my friend in Sussex. I do hope you are thoroughly resting, both of you, and enjoying yourselves. I am *fully* content here when able to work. It is really very nice here. Mrs. Case has lent me Sir Sterndale Bennett's[1] Life. It is so nice—you ought to look at it. I am solving a ' logical ' conundrum sent me by a man in Kentucky, U S A. I have to do these things sometimes. It 's an [sic] awful piffle and he ought to have done it himself or got help easily at home, but then his institution is ' The Potter Bible College '. Very kind regards to both from both, yours truly.

[1] Mrs T Case's father.

52

Villa Taunus, Ems. June 1, 1908.

Here 's a geometrical problem for you suggested by Romanesque architecture. Suppose a tower [1] has a square section and each wall terminates in a gable as at A and D. Let AB be the height of the gable. Then if the planes of all such triangles as ACD are continued so as to cut in such lines as AE, DE, four 4-sided figures such as ACDE will be formed. Prove that, whatever the length of AB may be, these figures are true rhombuses: so that AE, ED, DC, AC are equal. The same is true if the section of the tower is a rhombus and not a square. The proof is delightfully simple.

I had a delightful journey here The Surrey landscape was golden with a splendour of broom and gorse. (Read a man's dissertation for B.Sc. before leaving and this is the effect, for he couldn't say anything simply. Lud! I let him have it.) Dover, where (via Reading) I had five hours, was en fête for the French President. The promenade pier was outlined in electric lamps. So were the promenades on sea front and another pier (not the Admiralty), and the scene lovely beyond description at night. There were about 30 Torpedo boats in harbour and from 9 to 9.30 they gave a display with their search lights—principally by illuminating the chalk cliffs. I had a capital passage and a most comfortable coupé to myself all night. Arriving at Cologne at midday, I was able to start by the one o'clock boat to Coblenz. It was a perfect day for the Rhine. It has rained for me on most previous occasions. The view of Bonn and the Siebengebirge was very fine as we came up the river The Siebengebirge was very imposing and looked the ideal home of Saga. I had forgotten how very wide the Rhine is about there—the width of the river adds much to the effect. Had a most amusing experience of the dependence of 'apprehension' of objects on physical conditions. As we got abreast of the Siebengebirge near Konigswinter and it was opening out fully, something got in my eye, I believe an eyelash, and you want another Johnny to get out an eyelash for you.

[1] This is illustrated by a drawing of a typical German pyramidal roof, like Sompting tower in Sussex. A, D are vertices of gables, C a tower angle

The pain, increased by futile efforts to get rid of the thing, was just maddening and I couldn't manage the view with one eye. Now if it happened to a lumpish creature only intent on his Rhine wine and the tempting food they give you on the steamer, there would be something to be said for the 'fitness of things'. However by heroic efforts I at last got rid of the nuisance. Thereafter were the most splendid views of the Siebengebirge in the rear as we ascended to Rolandseck. The space between the Siebengebirge and Rolandseck I think is one of the finest things on the Rhine or anywhere and one saw it to perfection. Yet one of my rainy times on the Rhine I saw it in a more poetical mood, for it was near sunset and the rain had cleared and storm-clouds lit up weirdly by the fine sunset were hanging about the Drachenfels. It looked like the land of the Opera, Wagnerian, not like the world at all. There were lovely views all the way up to Coblenz. Bywater, years ago, had stayed at the 'Giant' Hotel and so I piously went there, tho' somewhat alarmed to find 'Hotel zum Riese-Furstenhof' painted outside it. However it was one of the few starred in Baedeker. I can recommend it, its situation close to the river is charming and it is not at all extortionate. I asked for an inexpensive room and got one, on the first floor too Room and breakfast (plentiful coffee and rolls) 4 35 marks. The next day I went up Ehrenbreitstein and succeeded in getting a rise out of the stolid and trusty-looking sentinel whose face melted into a smile from one ear to the other. By the way I took another sort of rise out of an officious railway guard, who when we got over the German frontier at Herbesthal told me I must put my luggage off the seats up on to the nets. I had indeed occupied the whole coupé with it, and it 's fair to say people might now be expected to get into the train in greater numbers, it being morning. I did it and then some people came and secured their places by putting luggage upon them. The guard came back and remonstrated with me for not having put up my luggage (the other people had gone out again). Without jaw I said it wasn't mine. He pointed indignantly at a piece which really was like one of mine. My reply was brief and German, not forcible—the *facts* were that, and he hastily departed with as complete a silence as I ever remember to have observed (the German for

him is wie ein begossener Pudel). I spent some time trying, as I have before, to discover where Turner painted Ehrenbreitstein from and how he got the elements of his picture together. I got unexpected help from an intelligent 'unteroffizier', whom I asked about a curious-shaped monument conspicuous in the foreground of Turner's picture. He told me there was one like it on the Karthause, the high ground on the other side of Coblenz, opposite Ehrenbreitstein, so that the whole town lies between the Rhine and the Karthause. The consequence is that the point A represents the point from which Turner would get the view of Ehrenbreitstein that he represents, the scenery he puts in his immediate foreground is at point B on the other side of the Moselle and at some considerable distance. This is what the 'Master' does (Do you know, a man reviewing my memoir of Monro and wishing to pay me a compliment said it was done in a masterful manner?) Can't you imagine the idiotic delight of a 'pragmatist' (excuse the low slang word) at discovering that Turner was a p. t and identified truth with whatever was convenient to him. I continued my journey by Rhine as far as the mouth of the Lahn in perfect weather and very fine views astern of Ehrenbreitstein, which detaches itself more and more from the adjacent highground from this point of view. The mundung of the Lahn into the Rhine is very beautiful, on one side the ruins Burglahneck and on the other the Schloss Stolzenfels (modern restoration) in picturesque lights, the former on the Lahn, the latter on the Rhine. Then a short ride by train to Ems. I was much welcomed by my landlady and her husband (the latter is playing to me at the moment, for he is one of the principal bassists in the band, which I am listening to as I write in the Kurgarten, where I have been having my coffee). The husband was just engaged in an improvement in my room; which had a homelike feeling for me (antecedent to which?). I missed a most convenient high desk out of it and was informed that a 'candidat' (young man in orders and with a view to a charge) had been allowed it in my absence, being strictly warned he must surrender it when I came. I told them it did not matter, but they insisted and the poor candidate had to disgorge I am really most comfortable in my room, it 's rather large and plenty of accommoda-

tion for one's clothes and all one's etceteras. It is quiet and retired being at the back with nice view on to the hills—tho' I own to buildings of a 'back' kind between. By the way ask Mrs. —— for me (you're sure not to know yourself) what the exact meaning and motive of Sullivan's Lost Chord is. They play it here occasionally and translate Der Verklungene Ton, which seems wrong. I can't guess from the music itself what it 's about. Aubrey Moore did have a jest about Noah's *arc* and the lost chord à propos of my immortal inaugural lecture. It 's very beautiful here but I want some one with me to share in enjoyment, but by dint of writing this to you in very beautiful surroundings I have 'raised' you in a kind of way (Samiel! Samiel! Erschein!) and don't feel so lonely. Send me a line when convenient. Tell dear little Jane I don't forget her at all. She 's ineffably sweet (no danger you'll tell her that). Look up Mrs. Wilson when you've time and when you haven't. I have quite cheerful cards from her. I can't say much yet about my kur. I have to sit in a thick fog (artificial) ½ an hour a day (as though a philosopher hadn't enough of that anyhow). A new nose treatment seems a mistake (new for me this time) and it *produces* the symptoms it ought to destroy: I must consider this with my doctor.

Kindest regards to both of you.

Went to English church on Sunday on chance of finding there some one to walk with, but the few men there seemed no class: so I was punished, but I only gave sixpence to the collection.

Haus Taunus, Ems.
10 June, 1908.

I enjoyed your interesting letter (in wh: you ignored my question) but you left out the Prince of Denmark. There was nothing about J. C. R. F., the topic of greatest interest: the dissertation therefore did *not* 'attain the highest degree of merit'. I am sending her a little model of the ordinary German wheelbarrow, which I hope will appeal to her refined taste. Tell her to go and give my love to Mrs. Cook Wilson (that will amuse J. C. R. F.). Glad you met the P. of O.[1] and do not doubt the acquaintance will ripen. Gratulor Garsington [2] titulis accedere nostris. . . .

[1] Dr Shadwell, late Provost of Oriel.

[2] The cyclists had sketched and reported on this village.

53

12 Fyfield Road. 11 July, 1908.

Louis Dyer had, it was supposed, very painful neuritis in ⟨the⟩ left arm. He went to Matlock for a fortnight—suffered agonies and they idiotically dosed him with opium, which the doctors here had to try to get out of his system. The symptoms however soon made them suspect grave mischief, malignant disease of the bone. It was thought that it might be enough to remove the top part of the arm near the shoulder, just as in Strachan-Davidson's case, the bone gradually forming a new surface for the joint. But it was feared the arm might have to be amputated. This alas proved necessary: it was malignant, but the thing had spread to shoulder and ⟨the⟩ shoulder had to be taken off too (done in London). He seemed making a good recovery when a clot of blood got on ⟨the⟩ brain and caused paralysis from which he died very soon. I saw the poor fellow a day or two before he went to London. He was so brave and even cheerful. I was filled with admiration of him.

The doctors said his case was anyhow hopeless. If he recovered for a bit, he would have got bad again for his system was permeated with cancer. I didn't know he was such a friend of yours. I have known him for more than thirty years. Poor W——, I wrote to him. They sent round a printed acknowledgement to their numerous sympathisers. . . . It 's capital in Oxford now. I take a header at our boathouse at 7.30 unless ⟨the⟩ morning happens to be too windy (tho' *entre nous* I think that 's all fudge as we have the boathouse to dress in) I can't help thinking they made a mistake about Grensted. If you write to him convey my sympathy. I have been greatly interrupted in my work since we are back—can't be helped; but we have just secured Mrs. ——'s cook, who seems to be a treasure. She will come after we return (Sept. 15, circa) and I trust life will become easier. You can't conceive *how* my wife worries over housekeeping and she has indeed had baddish luck since we returned. However we have got what seems a capital new boy. We seem as if we should have some peace at last. Of course I have had so much bother with the house and getting the new cook (advts. and letters) and my wife also being *so* poorly, that

the work has ⟨been⟩ very sadly interrupted. At Llandrindod I shall have very much fewer duties and (I trust) fewer worries, and I hope, tho' in a boarding house, really to get some work done. I have, I confess, spent some time with Bywater—that 's natural. I do feel so sad sometimes about his going. (N.B. ἀκόλ-αστος is, on account of privat:, proparoxytone.) How sweet of dear little Jane remembering us in her prayers Little Alan Stout does the same for Prof. Bosanquet and for *me*. I must write and tell Mrs Stout I hope he keeps it up, for we *both* need it. (You remember my addition to the usual health at mess, ' The King, God bless him ! ') How you must have been delighting in little Jane Yes, we just miss We depart Tuesday. Bywater has given me some more books, the photograv. of his picture and a photog of the Bâle picture of Erasmus. J—— was here a day and gave me Nicholson's ' etching ' of Oriel. Much love to Jane. Our very kind regards to you both.

Yrs truly.

54

Montrose, Aspley Heath,
Woburn Sands
[last week of July 1908]

. . . It is so kind of you to renew your offer to take me into your party in Cornwall. I can conceive nothing more delightful than to stay quietly in your happy family circle, with little Jane as the centre thereof. It is so kind of you to be willing to extend the radius of it to include me (Postulate Let it be granted that the family circle may be described with Jane as centre and of such radius as to include C. W.) But it isn't really possible. I doubt whether it would be advisable to leave Mrs. Wilson alone in Oxford till the 18th when we go to Llandrindod. She has been hysterical lately and has no friend to look after her there Moreover she is nervous about her fingers, which are very bad, and wants to have them examined by the Röntgen rays. I think it might have been a good thing if she could go to Llandrindod alone or be there alone, if she could have been with a friend there (Mrs. D——) but that plan has broken down; Mrs. D—— will be there but can't be in the same boarding-house. I could then have gone somewhere myself and

got some work done. It wd. have been nice to come to you then but I shd have had to work a good deal and it would be too late for you (latter half of August). Meanwhile don't worry about me. I am much better, have done some satisfactory work, if no great quantity One of my speculations seemed to go so easily into Aristotelian Greek that I wrote it in that tongue[1] It seemed really clearer and more adequate to the subject than English. I tried it on Gilbert Murray (with whom I had previously discoursed on the adequacy of Gk as a philosophical language), I sent him no English as the thing won't do, unless it tells its own story He was delighted and said he thought it couldn't be so clearly said in English Love to Jane. Kindest regards to Mrs —— and yourself With much gratitude for yr kind help and kind invitation.

Yours truly.

55

Oxford 7 Aug 1908

We returned here July 31st The last week at Woburn Sands was very hot and my wife was much tried It was difficult to get a cool place When the sun went down, however hot the day, it was usually too damp (at once) to sit out. [There follows a long and distressing account of the radiography of Mrs Wilson's hands and of the defection of the new boy He was followed by a ' motherless ' boy, a great relief] . .

Bywater is here from time to time I am to dine with him on Sunday. I was so sorry to see Grensted in the 2nd class . Perhaps I made him too clear and all he said was intelligible, or perhaps he failed in history . . We go to Llandrindod on the 18th and stay 4 weeks I am quite hopeful that I shall get some work done at Llandrindod. What I have done has been pretty satisfactory and I am *not* troubled by that distressing oppression in the head . . I hope you have a *piano* I am looking forward with horror to ' Kurkapelle ' at Ll It 's awful. . . . Our garden and verandah are just delightful now— bkfast on verandah difficult to beat anywhere in Europe More kind regards, yrs truly

[1] Published in the *Oxford Magazine*, vol. xxxi, No. 16, in 1913.

56

Oxford.
Sunday 16 Aug. [1908].

I have left the keys of our boat ('Witch') in College lodge for you. . . . I went first to your house but nobody there to take the keys. I cut off the dead flowers (a quantity) from the little standard which flowered so freely, so that you may have a chance of seeing it do it again, for which I claim a place in your 'spiritual exercises'. Been seeing a good deal of Bywater, last glimpses of him in Oxford. He is so pleased with Raleigh's lecture on Johnson and wished me to tell him so. Look up Bywater yourself, he's here the weekends till about end of August. Much love to Jane Wir haben schon eine Kochin, ein *Schatz*!

57

5 Granville Place W
31 Dec [1908].

This is to wish you a Happy New Year all of you, and to thank you for another kind letter describing your Xmas festivities which interested me I suspect little Jane didn't get the mechanical toy ('galloping major') which was to have been sent on 23d If not, wd. you mind applying at the shop which calls itself 'Sports Club', or some such name, opposite the Town Hall in St Aldate's and wd. you mind at same time asking if they sent a toy from me to the Carritts (mechanical swan) in Holywell. Yrs

58

[To illustrate his theory of the genesis of the Aristotelian text, Wilson had sent a correspondent the slip proofs of the list of contents of his book *On the Traversing of Geometrical Figures*. These showed a very considerable change and growth in the book after the first proofs had been printed and in the process of proof correction This letter was in consequence]

[Oxford] 2nd March, 1909.

As you are good enough to take the matter seriously, let me ask you to consider another point. What would happen if, instead of having to deal with the easily altered slips of printer's type, I had had to give my draft to the scribe who wrote the roll or, more probably, had begun to dictate it to him myself?

These alterations and additions would all be excogitated while the professional scribe's calligraphic copy was being made, and I suspect more than one was dictated at once. The list I sent you does not betray all the *interpolations* I had to make in the sections whose title is unaltered and *alterations* too to prepare for the new. I imagine that, for a writer continually recomposing while he was dictating the final book, the roll might have to be cut and strips inserted, perhaps sometimes a new strip or piece was simply pasted over the place for which a new passage was to be substituted containing the substitution. Both processes were liable to accidents. The pasted piece might become detached and leave the old text, inconsistent with some new matter further on. Mistakes might happen in the cutting and insertions; the beginning e g of a passage might be at the bottom of a column and, when the next column was cut straight down, the piece at the bottom ⟨of the former column⟩ might remain and thus you might have a duplicate head or tail of a chapter. And there are other thinkable accidents. More especially short sentences, which pointed forward or backward to a context removed or altered, might remain This would account for some such phenomena in the *Politics* ⟨of Aristotle⟩. My main idea, you see, is that the principal disturbances of the text were not due to later scribes or later dislocations of the MS. (I profoundly disbelieve especially in such dislocations) but that they probably happened in the writing out of what was the final form of the book, as for publication, owing to an idiosyncrasy which I fortunately exemplify in my own (im)proper person. [This view had grown on Wilson through a study of the *Politics*] Also there are certain stylistic characteristics, which I think were due to the mere fact of dictation as I have occasionally expounded in lectures

59

Wed. 7th April, 1909.
12 Fyfield Road, Oxford.

We got back on Monday. The time was rather unprofitable because the whole fortnight had scarcely a warm or sunny day. This made a great difference to my wife, who couldn't get out much, and she returned both unwell and dispirited. Unfor-

tunately a change of domestics has turned out badly, or partly so, for though we have a very nice woman as cook, a young German house-parlourmaid very specially recommended to my wife turns out to be a minx and we must be rid of her as soon as may be. This sort of thing affects my wife very much and has caused a return of hysteria, her condition having been lately very neurotic. These things affect my stupid head also. Besides, I have had to be constantly employed as errand boy during the uncomfortable transition period. and have besides to go with my wife sometimes on her necessary errands, because it isn't quite safe for her to be alone. It is hard on her for she suffers otherwise enough from painful arthritis in the finger joints, for which we have tried much in the way of remedies and in vain. So I haven't been able to get to our subject till this afternoon, and as my head isn't very well I will confine myself to the first point. If I don't do more it is quite good for me: indeed it is a kind of welcome anodyne.[1]

60

The Boar's Hill Hydro, near Oxford.
16 June Thursday 1910.

Your question was as usual quite relevant but when developing a continuous argument, as opposed to *discussing*, I find it difficult to switch my mind off to another question however germane. And so I forgot that at the beginning of my paper I said not that we thought of living as = growing but that growing was the fundamental conception we had about the living thing, and I gave as an instance that we thought of a *seed* like a bean (not as something *growing* but) as something which *could* grow, whereas a pebble could not. This is an instance of something we contemplate as belonging to living matter as against dead, though we don't think of it as actually growing, and our idea of it as such, i. e. as living and not dead matter like the stone, depends on the idea of growth. Later on in the sequel (unread) of my paper I have pointed out that in the more scientific conception of the living thing as feeding, growing, reproducing (and moving otherwise) one sees that the bottom of the thought is that life, as the living *quality* of the living thing, is the principle

[1] The remainder of this letter is in Part V, xiv.

which makes it have the activities of growth, movement, &c. though it is only thought of definitely through these observable activities, in which (according to a familiar usage of speech in such cases) we should say it is 'manifested'. These two parts of my paper (if I had only thought of it) give the answer to your question and objection so far as it implies 'alive' = 'growing', in the sense of giving what I think about it, at any rate, and had expressed I had begun to think about 'decay' but, partly in ⟨the⟩ hurry to get it done and partly through much preoccupation, quite forgot to develop it in the written paper As to the plant at the stage when it perhaps is growing no more, we, I think, clearly regard it as alive, as long as the sap rises and is absorbed, i. e. as long as it is 'feeding': which really involves (if we reflect so far) that, if then not growing absolutely, it is losing matter (wasting) which is replaced by the feeding, and thus 'growing' relatively is going on. The dying plant I suspect we think of as having parts of it dead, parts which no longer feed, in which the sap doesn't rise, and are just dead matter as lifeless as what never lived, as the withering tip of a blade of grass or the husk of wheat: 'dying' meaning then having more and more parts dead, and also probably as having less and less sap rising in the parts we still think alive. They feed less and less until unable to feed at all and cease not only to grow but to be *able* to grow

The more difficult case however seems to me to be the one which I mentioned at the beginning of my paper, viz. that of the *seed*. For, whether it be really growing or feeding in any sense or not, we don't think of it (normally) as doing either. But we do think of it as something which *can* feed and *can* grow: whereas the dead parts of the plant which have ceased to feed cannot feed or grow again. I suspect that in practice, while we certainly don't think of the seed as dead, like the husk, we don't naturally think of it as (actively) alive or strictly speaking ⟨as⟩ 'alive' at all, simply because of its quiescence. While we don't think of the seed as dead (wh· N.B. is obviously not the same thing as thinking that it is not dead) I suspect we only come to realise that it is in some sense 'alive', when we find certain seeds won't grow any more than a pebble—then we naturally come to think of those which do germinate as

having been 'alive' in some sense when not germinating. Growth is therefore exactly the test used to decide even here, in what is not actually growing, whether it 's 'alive' or not.

Not only, then, that which is growing but also that which has the potentiality of growing is considered by us ⟨as⟩ alive. Our thoughts are so filled by the idea of growth, the actuality by which we test the potentiality, that we don't reflect on what the seed actually *is* as opposed to its potentiality—but N.B. that if the question occurred to us at all we shouldn't answer 'it is a dead thing but one with the potentiality of life'. Probably we think of it in a way which corresponds to the formula 'suspended animation', even if we don't use this phrase. For I suppose this formula is itself the result of the observation that something which doesn't manifest the 'activity of life' nevertheless can't have been dead, because it afterwards shows such activity. It is just the kind of uncritical formula which belongs to imperfect reflection—or reflection in its first stage. We are probably helped by the analogy of sleep in the conscious living thing, and indeed the word 'dormant' is what we are likely to use .

Yours truly.

61

The Boar's Hill Hydro, near Oxford.
21 June 1910.

Your letter gave me great pleasure. I am glad to think that I have been of some use to you , such generous acknowledgements as yours are a great encouragement. And it was a no small encouragement to have a few men like yourself who never, or 'hardly ever', missed the weekly two hours' talk for the whole year and who showed such unwearied attention as you did. I always greatly enjoy the informal class myself and it is very nice to find from time to time that my pupils enjoy it also. Not long ago a young American professor writing to me said our conversations in the informal instruction class were such a pleasant memory to him, and your own kind expressions brought back his words to me

I trust that if I can be of any use to you in the future you will not scruple to write to me

Owing to domestic troubles, which quite prostrated my invalid

wife, we fled up here before the end of term and my last informal class was held here. With kind regards and best wishes, yrs. truly.

PS. I should have replied sooner to your letter but didn't get it until to-day when I went down to College.

62

[Shap, (? July), 1910.]

My remarks on the teaching of mathematics concerned the teacher's own method rather than the text-books . . . The defect of method in the quite elementary teaching of Geometry is that boys are usually given Euclid or some other geometrical treatise to learn the demonstration of propositions. This, I think, should not be done. The teacher should propose each proposition to the pupils as a problem to solve. Let them try first For instance, ask them how they would describe an equilateral triangle, if they were allowed a pair of compasses and a ruler. If the boys find a solution of their own, it may be right, even if not the orthodox and, if it really assumes too much, this can be pointed out, and the pupil should try to prove the assumptions he makes, which will often be quite right. If they cannot find the solution, they will often become far more able to appreciate the proof when it is given to them by the teacher. And sometimes it will be possible to lead them on from the point they have go⟨t⟩ to. If possible, I should do this from the very beginning. E. g , tell a boy what you mean by an isosceles triangle and then ask him to find out how to make one. Then you can lead him on to an equilateral. But in a boys' class this may not be always thought possible. I shouldn't agree with that view—or else the boys may have so little idea of the subject that you can't quite begin this way Then I should teach them by going through the steps of the discovery myself: getting them, when they understand it, to help by finding or suggesting the next step after you have given them the start. The boys will get much sooner a real interest in the subject in this way. Moreover every proposition will be to them a 'rider', and a class taught in this way will find 'riders' far easier than those taught in the ordinary way Boys who can follow and reproduce rightly and intelligently demonstrations in a given

text-book are often very bad at riders and are afraid of the 'problems' in the Geometry paper, because their minds have never been accustomed to originate thinking, but only to understand the given argument ready worked-out. In the case of those theorems which require a construction, it is the construction which is the important thing and the text-book, such as Euclid, *never* shews how the construction is found.

It is absolutely necessary that the teacher should try to show how the construction may be arrived at. The whole difficulty in many riders depends on finding the right construction. No wonder then the boy as ordinarily taught finds difficulty, because he has never learned from the text-book how the construction is found in the various theorems. He is accustomed to have the hard part done for him, that is to say to have the construction given to him, whereas he ought to see how every step in it is suggested by a consideration of the problem.

The real difficulty, as regards time, is that it means so much extra work for the teacher. You must yourself study the given demonstration beforehand and try to see how the discovery of the various steps in it is suggested. This is not always easy: but I can make a suggestion which may be of use. A theorem may be quite evident in some special symmetrical case and this may suggest what to do, when the symmetry is disturbed. For instance, I suspect that the theorem of Euclid 1 47 ⟨Pythagoras' theorem of the square on the hypotenuse⟩ was first suggested by the case where the right-angled triangle is isosceles. This is the case worked out in the *Meno* ⟨of Plato⟩.

As a matter of fact a theorem and its construction are not infrequently discovered without looking for them, in the course of some other investigation. So that, in such a case, it is not true that the construction was discovered by considering the needs of the problem, because the problem itself had not occurred. Some other problem was before us and, in making our constructions and seeing what followed from them, we observe something that part of our construction necessitates and then this can be turned into a separate problem, the construction for it being what we have accidentally discovered. I daresay if you find yourself sometimes hard up to see how a construction or demonstration was discovered, I could help you.

As you realise, the work of the teacher is at first increased, but the class will make far greater progress, though they may have, say, only done half a book of Euclid while another has done two books. But your class will *know* and will not easily forget, whereas the other may have to go over the ground again.

One very important and usually neglected thing is to have the figure drawn on the board as correctly as possible. Let the straight line be ruled, and the circle described by a pair of large wooden compasses, which you can easily get. When I was a boy, I first got to understand Geometry through a teacher who used wooden compasses. I remember I first realised what an angle meant and what equal angles were, when he drew an angle by ruling along inside the legs of the compass—the compass being put flat on the ⟨black⟩board—and then carrying the compass to another part of the board and making an *equal* angle by ruling inside the legs of the compass again, the inclination of the legs not having been varied When I went to a higher school and there wasn't such apparatus, I made a pair of wooden compasses and used it in class with the approval and appreciation of my class master

In teaching Algebra and Arithmetic you should treat the 'book work' in a similar manner, letting the boys think it out as far as possible themselves and only helping them when they fail.

A second thing I am very anxious about is that the teaching of elementary mechanics, including hydrostatics, should begin as soon as possible In many schools the boys are kept working at Geometry, Algebra and Trigonometry long before they begin Mechanics As soon as a boy knows the elements of Trigonometry he is able to do Mechanics and should begin at once. The more abstract studies are so wearying, and the application of Geometry and Trigonometry to Mechanics gives them quite a new interest—the sooner therefore Mechanics are introduced the better. The ordinary practice, which I have described, tends to kill interest in the subject It is as if you kept a boy grinding always at Grammar and exercises in Latin, until he had got through all the exercise books, before allowing him to translate a Latin author and giving him that interest.

There is another very important point and that is the teaching

as regards the use of signs of direction, i. e. plus (+) and ⟨minus⟩ (−), used as signs of direction in Trigonometry and afterwards in algebraical Geometry, or analytical Geometry as it is called. But now I admit this is a very difficult matter, because mathematicians, even the best books, are in the dark about it. The usual thing to say is that it is a 'convention' to represent direction by the signs plus (+) and minus (−). This is sheer nonsense. You could never get the mathematical results (and they are marvellous) out of a mere convention. If it were mere convention one might ask why should not the signs of multiplication (×) and division (÷) be used as signs of direction? And to this question the 'conventioners' have no answer. It is possible however that you mayn't have to teach Trigonometry and we may let the sleeping dog lie for the present.

In Algebra and Arithmetic you should take every trouble to make boys understand proportion and incommensurability. Nixon's 'Euclid revised' has a capital treatment of the incommensurability of the side and diagonal of the square—Euclid's own, if I remember right, but I haven't the book before me—which makes the incommensurability clear without the help of algebra or square roots. The only books I have ever seen myself which treat the elements in the right kind of way are those by De Morgan There is an *Arithmetic* and, if I remember rightly, an *Algebra*. As regards Algebra, a title I am sure of is De Morgan's *Trigonometry and Double Algebra*, but that is too advanced. I *think* there is an elementary *Algebra* I do not always agree with him, especially in the *Double Algebra* (which wouldn't concern you), but he goes the right way about it and is suggestive and stimulating [it]. For instance, his remarks on *Concrete* and *Abstract* number, upon the meaning of the *minus* sign in the answer to a problem (even though this latter may not be altogether right).

Another thing you will have to be careful about is the meaning of an answer with $\sqrt{-1}$, in an algebraical problem: and here I am afraid you would find no help whatever from mathematical books. Suppose the problem is what is the value of x when it satisfies certain conditions, the boy must be taught the difference between the answers $x = 0$ and $x = \sqrt{-1}$. You see I have sent you a fairly lengthy reply instead of 'merely mentioning

literature', but the reason is that I know of no satisfactory literature on the subject. . . . With kind regards, yrs. truly.

[*The Elements of Arithmetic*[2], A. De Morgan, 1835, 5th ed. 1848 (see especially the Preface), London (Taylor & Walton)

The Elements of Algebra, A De Morgan, 1835.

Trigonometry and Double Algebra, A De Morgan, 1849

The Connexion of Number and Magnitude, A De Morgan, 1836, is probably the book to which the letter refers for the distinction between *abstract* number and things counted or repeated

De Morgan's *Differential and Integral Calculus*, 1842, is the forerunner of certain modern books which endeavour to make the Calculus intelligible to a reasoning mind, not gifted mathematically It is still worth perusal by philosophical students]

63

South View House, Shap,
Westmoreland. 18 Aug. 1910

My friend[1] recommends as about the best guide to modern method in teaching mathematics *A school course of Mathematics*, by David Mair. Clarendon Press

He says that Mair has done more to improve mathematical teaching than anyone else in England He (Mair) is the senior examiner of the Civil Service Commission From what he says I think Mair's book would give you very valuable suggestions. My friend thinks the books by Hall and Knight are probably the best among ordinary text-books. These authors sometimes wrote jointly and sometimes with other authors. But he says he won't venture to recommend them as sound in *principles*, though they have much merit as simple guides I should think probably you would have to have Mair for your own guidance and possibly have to give the boys Hall and Knight's books.

By the way, when you do teach geometry and are trying to interest the boys in the 'thinking' method, you would probably gain their confidence if you let them have the usual proofs of the *Pons Asinorum* and then gave them, after they had studied these, the simple demonstration without construction which I think I gave to you. Of course I would let them try themselves first before shewing them the usual proofs, some boy might well hit upon the proof I gave you. Yours truly.

PS. I regret I have mislaid your letter, so this must go round by University College.

[1] [The late Mr. J. W. Russell, lecturer of Balliol College]

64

7th May, 1912.

You formerly spoke feelingly of my aspersions upon the introduction to *Post. Analytics*,[1] 1. 1, and, as these were only made in lecture, I concluded you had become acquainted with them either by seeing a copy of my notes or hearing of it from a pupil. My reasons were stated in lecture thus: 'The passage professes to sketch the subject but it is a mere analysis of the *first chapter* though it has one line to the effect that the σκέψις is περὶ ἀπόδειξιν and is of ἐπιστήμη ἀποδεικτική, and there is the farther difficulty that ἐ. ἀ. is properly the subject of the *Posterior Analytics*' I added that the *Post. An.* began with a general statement, like the *Ethics*, which wasn't a sketch of the subject and that that was the Aristotelian manner. It has occurred to me since that this kind of thing is *not* likely to have been done by a Peripatetic philosopher. He wd know that ἐπ. ἀποδ. was the proper subject of the *Post. An.* No reason why he should go out of his way to make that kind of mistake. On the other hand when writing *Pr. An* introd^{n} Aristotle may well not as yet have conceived the special log. treatment of science as in *Post. An* In fact in writing on syllog *demonstration* as opposed to mere *dialectic* he thought he *was* writing on ἐπ. ἀποδ. Afterwards he felt the *Pr. An.* was too general and something more special required on the sciences and so he wrote the *Post An* —and as to the analysis being of the 1st ch: it 's likely enough Arist. might have written so, intending, after the part to which the analysis referred, to go on with another introduction to the next part, but as a matter of fact he went straight on without doing it. This is the kind of mistake an author might make, but not at all so likely a mistake for an interpolator who wanted to write an introduction. He'd be likely to give something general covering the whole treatise. The origin of my note[2] on *Tim.* 37 c was this:—Somebody, who had before him Archer-Hind's foolish note on the place, prepared a juggling emendation in which ἰδέων was somehow got out of ἀιδίων, really supposing the interpr^{n} of the kind A. H. had in view. The editors of the periodical in which the article with the emendation was offered

[1] A slip for *Prior Analytics*, see the author's words, p. 31 [2] See p. lxxii.

sought advice. J. A. S. told me of it and I wrote this paper which the editors communicated (typewritten) to the would-be emender. Afterwards I sent my paper to the Journal of Philology. I enclose my article from Cl Journ . . . Yours truly

J. COOK WILSON.

In same no. of Cl. Journal (April) ⟨J of P. lxiii, p. 136⟩ Henry Jackson has come a *cropper* in trying to emend punctuation of Soph. 244 c.

65

New College. 31st May 1912.

. . . By the way as I was going at a fair pace to-day, being late for lecture, on my bicycle I passed M. I column and I heard one of the men riding at the head call out 'There 's that old man again!' How smoothly the waters close over us!

Yours truly.

66

12 Fyfield Road 2nd June 1912.

. . . the matter of the account of the pleasures of knowledge in the *Republic*. Plato describes these as incident to the *filling* of the soul, leaving one in the difficulty that they then seem to be mixed pleasures at least and perhaps wholly pleasures of relief of pain The difficulty is directly met in the *Philebus*, for Plato there expressly lays down that the pleasures of learning are not the removal of ⟨the⟩ pain of want, because the absence of knowledge is not felt as a pain otherwise, as Plato says acutely, we should not forget (or we shd be conscious of the pain of the losing of knowledge, etc) . . . [he continues about the *Sophist* and the *Parmenides*] for it consists in what I confess it *has* taken me some time to arrive at, trying to appreciate the quite plain meaning of the dialogues apart from the presuppositions which encumber us so much in our study of him. . . .

67

15 Dec 1912. Oxford.

I regret that owing to the great demands on my time through the disquieting and distressing change in my wife's condition (she has been getting worse since beginning of August con-

tinuously) that I haven't time to write to you as I should like about the Arist[n] question. But I think I can in a few words perhaps comfort you. (1) The ἕτερόν τι ὄν business is very fully dealt with in my ordinary Aristotle lectures. (2) It is not really relevant to the particular question before me—the confusion about the use of the word predicate in both ancient and modern times. Whereas the remarks in *Post. An.* ⟨are⟩ relevant. You would realise this if you could see the long discussion I have on the distinction of subject and predicate, which perhaps I may some day put before you. Indeed I intend to do so. (3) The kind of diff. Aristotle gets into (as I suppose) on the occasion when he had time (?) to reflect on the nature of predication was important to me, and he's not the least excused by the fact that he wanted to meet a special difficulty. It 's a bad look-out if he had to make a lot of mistakes to do it (4) There may be a ' higher synthesis ' which justifies a circular definition, but this is just the place at any rate where it won't do (5) Don't misunderstand these ' extracts of Logic ' ! They are merely printed because, owing to a drastic rewriting of my lectures under great difficulties, I can't give the men anything like a complete course without printing pieces for them to read which I shan't have time to lecture on I send them to you because some of them are likely (I imagine) to interest you. I think, e g , what I have written on ' Modality ' and on Bradley's ' Ultimate Reality ' might be of the kind I intend this vac[n]. to print a good bit more (e g. on subj and pred. in the sentence of the form A is B) and on the negative judgement.... Yrs truly.

68

12 Fyfield Road, Oxford.
22 May 1913.

The enclosed contain extracts from my lectures which I was obliged to omit in delivery. I make a point of letting my hearers have a fairly full course, covering the usual main topics and latterly I have helped myself out in this way. Don't trouble to study it. I shall never ask you even if you have read any of it. If you have any leisure and interest you might look at the §§ on the Categorical and Hypothetical propositions as these

contain a covert polemic against Bradley. If you have any further curiosity you might look at the §§ on the Negative *conceptian.* Yours truly.

69

New College. 27 Dec. 1913.

I send you of my Logic Extracts Pt. II §§ 26–60 (with exception of § 57). I think I sent you §§ 61 seqq. before (didn't I) but a better print. Part *one* is in the press and will follow.

Yrs. truly.

70

12 Fyfield Road. Oxford.

Oct. 22, 1913.

I was greatly pleased to get your letter. I have a very vivid and pleasant recollection of you. I am much interested in your present candidature for a lectureship in Otago University. I resolved to write you a testimonial though you did not ask for it. But soon after I had a request for one through Mr. Wylie and have sent it through him. Your degree in Greats is quite good enough because you were considerably handicapped at the start, and I daresay with the same advantages as people here you would have secured a ' First ' comfortably

It was very considerate of you not to call in January but the fact is that in that month at the beginning my wife had a sudden and decisive change for the better. I think you rather overdid it in courteous consideration, for when a man is going so far one can always spare a little time for him. I regret much I have no photograph I could send you. Elliott & Fry photographed me some few years ago, but I was far from well and the result is most melancholly [*sic*] I shouldn't like anybody to have it. But I must think of having some made and will remember you. However I don't think it will be yet awhile, for unfortunately either in consequence of over-exercise in the autumn—grubbing up trees, the hardest work I ever did—, or of an unrecognised influenza attack, the doctor doesn't know which, I have got, the doctor says, a weakness of the heart (I suppose so-called ' athlete's heart ') which he takes so seriously as to prescribe as much rest as possible for the present. He allows my morning lectures but I have not been permitted informal instruction this

week. The last years I have had 2 delightful classes, one of men and one of women. The women were good, and one got a 1st and another a 2nd. This year also I have a good women's class and the new men's class seems promising.

This Summer was the best holiday we have had for years—in Westmoreland near the scene of the Aisgill railway disaster. The air did my wife an extraordinary amount of good. The 'squires' in the neighbourhood were extraordinarily hospitable to us. One of them housed my motor-car in a lordly stable. I have acquired a car and the art of driving it and am glad that my wife was able to go about with me, though the country was too hilly for her. She never quite liked coming down a steep hill though I always went slowly. The car of course contributed much to the pleasure of our holiday. I have a very good friend in N.Z., Bevan Brown, Headmaster of the Christchurch School, and Professor Macmillan Brown. With kindest regards from Mrs. Wilson and myself, Yours truly.

71

12 Fyfield Rd. Oxford.
November 9, 1914.

To LIEUT.-COL. H. D. FARQUHARSON.

DEAR SIR,

The enclosed letter from my friend your brother Spenser must serve as my introduction and commendation to your kind services.

In view of the difficulties caused by submarines and floating mines I have some suggestions which I should like to put before the naval experts of the Admiralty. I want to secure that they shall be attended to merely, and if they seem of no use, I don't want the Office to trouble to do more than send me a line to say that this is so. I had intended to send them now, but in the meantime an urgent matter has come to my knowledge which I must write about at once.

From an absolutely reliable Danish source I hear it is believed in Denmark that the German fleet is only being held back until certain new guns are ready which will out-range our guns by a matter of two miles. If this is so, it accounts for Admiral Tirpitz's boast that he would surprise the British Admiralty about this very date.

I daresay the Admiralty know all about this but it is well to make sure. Yours truly,

J. COOK WILSON.

PS. My suggestions [1] will follow in another letter.

72

MILITARY CYCLING

To the Editor of 'The Times'.[2]

SIR,—The letter of mine on military cycling which you were good enough to publish has not only evoked a very kind notice from the *Manchester Guardian* but has brought me a communication from a distinguished cyclist officer which I trust the War Office may think worthy of very serious attention. It seems that we have no cyclist battalions with our Army in Belgium, although the country in which it is operating is specially suited to the operations of cyclist forces. Now we have at home quite a considerable number of cyclist battalions, smart, well trained, and enthusiastic, and each with its machine-gun detachment. Their ranks, I believe, are full, and their reserves, in some cases at least, of equal number. It seems that these are being kept in this country to perform a service which could be rendered by much less valuable troops, to their exceeding regret. If the commanding officers of these battalions are anything like as good soldiers as the one who wrote to me, we might expect quite remarkable results if they were given their chance in the present war.

Such men naturally burn to be at the front, where I have no doubt they would give a brilliant demonstration of the special value of cyclists as fighting troops. I may repeat that I hope the War Office may give this matter their earnest consideration.

I have the honour to be yours, &c,

J. COOK WILSON.

[1] They were sent on the 10th Nov They concerned (i) the destruction of submarines, (ii) the closing to submarines of a passage through a mined area, and (iii) the destruction of contact mines

[2] Published 11 Nov 1914. The article in the *Manchester Guardian* was under date the 30th Oct 1914, and referred to a letter from Wilson in *The Times* of the 29th October The *Manchester Guardian* said, 'All honour to those who have the capacity to think for themselves in a science which of all others most needs originality and independence of thought, the courage to give their views to the world and the patience to wait for their acceptance.'

STATEMENT AND INFERENCE

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PART I

INTRODUCTORY

I

THE DEFINITION OF LOGIC[a]

§ 1. A GENERAL definition of the scope and nature of any subject is usually expected to precede the exposition of the subject itself So Logic, to be systematic, might naturally be required to open with a clear definition of itself, from which its province would be determined and the order of the subjects within that province Yet there is considerable disagreement about the investigations to be included under the term logic, and writers who agree in the main about the subjects to be studied will still differ in their general conception of the whole, that is as to what the proper definition of logic may be.

It is a striking fact that there should be any doubt at all and with the consideration of this fact we must begin First, we observe that the sciences in general are provided with accepted definitions, especially the exact sciences In the case of a quite new science or study, indeed, we should not be surprised if there were some doubt as to its definition; but logic is not a new study, it is probably nearly as old as scientific geometry. Secondly, it might perhaps seem obvious that the logician could not even begin his subject unless he knew its definition.

These difficulties are really founded on a misunderstanding and want of observation of the actual state of things in the sciences themselves, whether provided with an accepted definition or not In none of them did scientific reflection begin from a quite general definition of the object of the given science, but with particular problems[b] which the needs or interests of life and experience in one way or another suggested For example, some one had occasion for practical purposes to find the distance

[a The relation of classification to definition is discussed in Part II, chs. XVI–XVII

b Probably suggested in the first instance by Mansel's *Aldrich*[4], p lxxvi, note g, and the quotations there from Plato, *R* 527 a, and Comte We may compare 'Artem inveniendi cum inventis adolescere posse, statuere debemus' Bacon, *N. O* I 130]

of a vessel from a point of observation on the coast. This purpose led in the end to the discovery of the group of pure theorems and problems connected together under the title 'congruent triangles' [a] and to the study of these questions and those of similarity of triangles as we find them in Euclid's *Elements*.[1] Thus a given question in a science like geometry does not originate in any general conception, for example of space, nor in any conscious desire to study what this implies, for the investigator may not yet have entertained either. His solution depends upon the particular character of the problem within its own limits. It is possible then to know what we want in one way [b] but not to know it in another, and it is the first way which is important in a given science, where the investigator knows quite well what he wants, but may never have reflected whether the question belongs to the science, say, of space or to the science of pure quantity.

So far then, logic is not in an inferior condition as compared with the sciences. It starts as they do with special problems (the analysis, for instance, of the forms of argument) and, if it has not yet, like some sciences, got a clear definition, in one important sense at least it does not need such a definition. For neither are the sciences themselves helped to the discovery of *their* truths by a general definition of the kind of thinking to which their special problems belong

§ 2. While, however, investigation starts with particular

[1] Books I, II and VI

[a] Wilson at last came to giving Euclid, *Elements*, I. 1, as his illustration here I have substituted *Elem* I 4, 26, &c , as historically more satisfactory. cf Proclus *in Eucl* I 352, and Sir T Heath, *Thirteen Books of Euclid*, &c., i 304–5. At one stage, Wilson used one of the Pythogorean problems connected with transformation and application of areas, a subject which is an even better example of the point he is making but more difficult for the non-mathematical reader My illustration is connected traditionally with Thales' determination of the distance from the shore of a ship in the offing.

[b] Marked in the MS 'to be expanded' I have endeavoured to explain by an addition what is meant The phrase recurs with a different bearing in § 12, of persons who know particulars but have not yet attended to their universal implication The phrase is used by Aristotle, in the sense inverse of that in § 12, in *An Po* 71[b] 5 (cf. *Eth Nic* 1147[a] 6). Wilson's use here is, I think, an unconscious reminiscence of Tylor, *Anthropology* (1881), p. 318, where, in connexion with the dawn of geometry, the author says 'the Egyptians then knew and did not know about geometry'.]

problems, thought of severally and not conceived as parts of a whole, the solution of one problem will yet lead to another; sometimes because it needs that other for its own solution, sometimes as suggesting that other. In this way there grows up something like a systematic body of knowledge whose parts have organic connexion. After a time this connexion of problems and theorems with one another suggests the question whether there is any one general conception which covers them all. Now that is a question which does not condition or originate the activity of the science and, accurately speaking, does not belong to that activity at all. On the contrary it presupposes the procedure of the science as already existing and arises from a new kind of thinking, i.e. not the thinking which constitutes the method of the science but reflection on that method itself.

§ 3. Now there is a progress always towards unity in a science itself—that is to say towards a unification of truths already ascertained, which, though akin to the attempt to find a definition of the given science or department of thinking, is not quite the same thing. For instance, in geometry we may have a proof of the properties of the circle based upon its definition, and an accurate proof. Yet we feel that we understand better when we find analogous properties in other curves and arrive at a general conception of conic sections, of which the circle is only one. Then after recognizing this unity, inasmuch as all these curves have the same kind of property, we are led to a new demonstration not confined to the circle alone, but valid for all conic sections. Here we have not made the demonstration of the given properties of the circle any more certain, but we have improved it. We have a greater insight now into the fact, when we see it as an instance of a more general principle. And more than that, we can even say more accurately why the circle has this property. It has it not *qua* circle but because of the properties which it shares with other conic sections. Here the desire for unity actually improves the demonstrative process within the science itself, but it is not due to a mere philosophic reflection outside the science, nor does it aim at a definition of the science. The impulse to find a definition is not directed to finding more general theorems which will unify under themselves a number of special theorems; it is rather the attempt

to find a universal which will cover the whole and to differentiate it so as to be able to map out the various departments of the science. Thus we say, for instance, geometry is about space, algebra about pure quantity, and so, if the question is once asked what the definition of logic is, we might suppose that all we have to do is just to observe the common characteristics which cohere in one whole, in the subject of logic as it has grown up historically.

§ 4. A system of theorems, however, which is coherent does not necessarily fall under one and the same science. The problems of one science may lead to those which belong properly to another. Hence the fact that a given group of problems coheres does not guarantee that they all belong to the same science, and therefore a generalization from their coherence might be wrong. In his *Elements* it is necessary to Euclid for the theory of proportion between lines, areas and volumes, i.e. between geometrical quantities, that there should be a discussion of the general theory of proportion. This accordingly looks like part of geometry and forms Book V. But though necessary to geometry it is not a part of it, belonging really to the general theory of quantity. And there are other books of Euclid's *Elements* which also belong to this general theory, though their subject is studied with direct reference to geometry.

The coherence, then, of a set of problems does not necessarily show that they belong to the same science. Similarly in logic, though a given problem which we may decide to be logical, e.g. the validity of thought in relation to reality, is connected necessarily with certain other problems, it may nevertheless be true that those other problems belong to metaphysics, psychology or even to grammar. But that will not excuse us from considering them, and we must not yield to the temptation of avoiding a difficulty incident to our investigation on the plea that it is 'extra-logical'. The solution of a problem in one science is often necessary to the solution of a problem in another. Algebra and geometry are different sciences, but algebra is useful to the geometrician.[1]

§ 5. There is a further difficulty which affects some subjects more than others. Even when we have the right group to

[1] Cf. § 21.

generalize from, i.e. a group really unified by one universal, the discovery of the common element in it is not always easy. The traditional idea of abstraction [a] is here most misleading. We get to think of abstraction as if it were merely leaving out the elements in which a number of complexes differ, and retaining the common element. This presumes clear knowledge of the elements in each complex and so the procedure is the simplest possible. But the actual procedure is usually very different. The elements are not as a rule before us in such clear analysis and we often *feel*, as we say, that there is an affinity, but find it hard to discover in what it actually consists. Take, for instance, the Socratic search for definitions.[1] Here the attempt is made to find a universal to unify a class of particulars, especially the universals of the various virtues. People discussing the subject agree as to whether a given act is just or unjust, and we don't find in this Socratic investigation that the real difficulty is about particulars. And yet the investigators are liable to disagree as to what it is in just acts which makes them just and the discovery of the common element often involves a considerable amount of argument and investigation. Abstraction indeed is not so much the picking out of one element already recognized from a number of others already recognized, but is usually a process in which the abstracted element is for the first time coming into clear consciousness. This process is often slow and the recognition of the true universal grows clearer and clearer as our experience itself grows, or as the science which is concerned itself progresses. The act of abstraction then, even when we have the right matter to abstract from, may be difficult, and it is difficult not only in the case of logic but in other departments also of what is called philosophy.

§ 6. The definition of a science or of any study then does not help to the solution of its particular problems and, in the case of logic, it is well to remember at the outset that the value of our solution of a given question does not depend on our being right or wrong in the general definition of the subject. Yet thought aims at a certain completeness in the grasp of its

[1] Cf. §§ 11, 12, 35, 166, and 175.

[a] Derived from Ueberweg, *Logic*, § 51, and Lotze, *Logic*, §§ 23, 121 and 157, but the point goes back to Kant (*Logic*, I. 1, § 6 et al.).]

objects which is not attainable without definition. We want to know not only the solution of problems, or how one necessitates another: we also seek for their general connexion under some unifying universal or characteristic. Our impulse is not satisfied till we get a conception, the articulation of which we suppose will cover the whole of the science or department of study.

The ideal of the definition of an inquiry is that while it covers the whole subject it should be such as to indicate within itself, by its own differentiations, the total divisions of the subject. It may then, by its very generality, indicate special fields which ought to be, but have not at present been, investigated. For, when we have the universal, we may discover species implicit in it which may not as yet have been approached in the course of the actual solution of the problems of the science in question. This ideal definition cannot be obtained in every science because we cannot always differentiate *a priori* the genus given by the definition, and so determine *a priori* the species and the departments thereof. For these latter may depend upon experience to reveal their subject-matter. Yet the more the empirical sciences advance, the more they progress to the unification of their theorems on the one hand and to their ideal definition on the other. They endeavour to systematize the knowledge which they have, though clearly such systematization must always be provisional.

In the exact sciences, where the method is *a priori* (what this precisely means we shall determine later),[1] it might seem at first sight that, after definition of the whole, the determination of the subordinate definitions of the parts indicated by the general definition might be possible by simple successive differentiation *a priori*. For in such sciences we *can* differentiate universals into their species *a priori* and know that our classification is exhaustive. Thus we may divide geometry into plane and solid geometry. Then the study of plane figures may be divided into that of rectilinear figures, curvilinear figures, and the combination of the two, and so on.

Yet this kind of differentiation is but of a limited character. The actual working of a science, in the solution of its particular problems, leads to departments of investigation and so to

[1] §§ 16, 243.

principles of classification, which we can arrive at in no other way. Hence, these important differentiations of the province of the science cannot possibly precede its actual development, and the field cannot be mapped out at the beginning, *a priori*, as a mere consequence of the general definition of the science. Thus it turns out that not only in the empirical but also in the exact or *a priori* sciences, we have to wait for the progress of the science, in the solution of its problems as they occur, in order to effect the successive differentiations of the general notion of the science and to articulate its departments. To take a simple instance, the division of triangles into right-angled, acute-angled and obtuse-angled depends upon the proof of Euclid, *Elements*, i. 32. One example among many in a higher department is the discovery of the Cartesian method of co-ordinates, which brought with it classifications of geometrical subject-matter unsuspected before. The reason of this will appear hereafter when we have seen what the method of the mathematical sciences really is.

It is important therefore to observe that the differentiation of the definition of an inquiry depends upon the particular subject-matter and can therefore only be effected by *scientific* thinking proper, not by philosophic or logical reflection. In logic, too, we must expect that the differentiation of the departments to be investigated will depend mainly upon the development and discussion of particular problems, and that it would be as futile here as in science to try and formulate a complete scheme of its subjects beforehand.

§ 7. Logic, as the history of Greek philosophy shows, is no exception to the rule which has governed the development of the sciences. It began without any definition of itself. Even after logical inquiry had become more or less independent and methodical, it remained without any such definition. In Plato's case this is not surprising, for, though he made some contributions to logic proper, these are not advanced so far as to make it obvious that they form a separate province of philosophical investigation. Aristotle however has become conscious of the separate nature of the subject, for he thinks of it as a whole and has devoted special treatises to it. Yet he neither gives a definition of it nor has he anywhere a discussion of the sphere

peculiar to logic. Of the inquiries grouped together at the head of his works and commonly styled the *Organon*, the *Categories* has not even the pretence of an introduction. The *Prior Analytics* opens with a few lines which profess to sketch the subject but, with the exception of one line, we find merely a summary of the first chapter. The subject is said to be 'proof',[1] properly the subject of the *Posterior Analytics*. This book (one of the author's most mature works) begins in truly Aristotelian fashion with a general proposition, 'all teaching and learning of an intellectual kind arises from previously existent knowledge'.[2] This is not a definition of the subject he is about to investigate; it suggests however what is more clearly expressed in the opening of the *Prior Analytics*, that his main intention is to discuss inference. If so, the discussion of propositions, for example, might have come in as subordinate to the general purpose. The *De Interpretatione* has a more systematic opening than any other of these treatises. It distinguishes thought from things and language from thought. But, though enumerating particular topics to be discussed, it has no general account of the subject as a whole. Moreover, its style is scholastic and it is a bare analysis of the early part only of the *De Interpretatione* itself. Nor is there in the body of the *Organon* any attempt at a definition, and the only thing like a general name for logic in Aristotle is *Analytics*;[3] even that is not intended by him to designate all the treatises in the *Organon*.

We should naturally look for some definition of logic in a passage of the *De Anima*[4] where he classifies the various forms of knowledge. But, though he is there speaking of philosophy as well as of the sciences, he does not mention logic even indirectly. We may conjecture a reason for this. He is thinking of the processes of the attainment of truth and may very well have thought of logic not as a process of this kind; that is, not as a study by which we add to our positive knowledge but rather as an analysis of the mental forms and processes which

[1] Περὶ ἀπόδειξιν, καὶ ἐπιστήμης ἀποδεικτικῆς. See however my *Aristotelian Studies*, I[2], p. 89, note 1. [Cf. Letter 64.]

[2] Πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προυπαρχούσης γίνεται γνώσεως. Cf. the opening of *Eth. Nic.*

[3] Τὰ ἀναλυτικά. [4] *De Anima*, 1, ch. 1.

are common to various departments of knowledge and opinion. Thus logic may not have come before his mind when he was classifying the sciences, though it does not follow that he consciously excluded it. This suggestion is in agreement with the vague term *Analytics*, for that seems to imply not the discovery of new truth but rather the analysis and examination of what we have already. Beyond this the word tells us hardly anything. The application of the term 'logic' to the subject is attributed to the Stoics.[a] The adjective from which the term is derived has in Aristotle a very different sense. The absence of a definition in Aristotle did not escape the notice of his scholastic interpreters.[1]

§ 8. Aristotle then, who founded the study, offers no definition of logic and, at the outset of our inquiry, it is safest to adopt a broad description of the subject and not to attempt a more precise or detailed definition Some writers, for example J. S. Mill, make inference the main subject of logic. Yet in Mill's work and in the ordinary text-books there are topics other than inference and those not treated merely in relation to inference. Hence we find wider definitions. Whately, for instance, calls logic 'the science and the art of reasoning', and Mill, at one place, 'the science of the operations of the understanding which are subservient to the estimation of evidence'.

Whatever their differences, however, all accounts seem to imply that *thought* as such is the special object of logical inquiry and that logic owes its existence and its difference from the sciences to some sort of distinction between thought and *things*. Our view then of the nature of logic may depend upon our view of the nature of this distinction, as well possibly as of another distinction within thought itself.

Thought in general may be distinguished from other aspects of human consciousness; sensation, for example, or our practical and emotional faculties, such as wishing, desiring, willing and

[1] *Artis Logicae Rudimenta, from the text of Aldrich*[4], H L Mansel. Oxford, 1862, p xliii [The reference is in fact to Ramus not to the Schoolmen.]

[a] Rather the earlier Peripatetics. The Stoics included under τὸ λογικὸν μέρος, (*a*) Dialectic, (*b*) Rhetoric, Logic in our sense falling in (*a*). The mistake (which is common) probably arises from a hasty remembrance or reading of Ammonius *in Cat.*, ch. 1]

liking. Thought in fact means only that activity of consciousness by which we know or try to know.

It is, at all events, better to leave the definition of logic in a very general form at the beginning, as some kind of study of thought. We shall thus be less likely to be unconsciously committed at the very outset to some preconceived theory which might prejudice the development of the subject; if, for example, we were to say that 'logic studies the laws or forms of thought in general'. The word *law* would in fact introduce associations which we shall see later have promoted a mistaken view of the office of the logic of inference.[a]

[a The description of Logic is developed from Mansel, l c, liii and lxv, probably in the light of Hegel, *Logic* (Encyc), § 19 I have put into the text the definitions which the author used as illustrations to the lecture]

II

THE RELATION OF KNOWING TO THINKING

§ 9. THE description of logic as being some kind of investigation of thought in distinction from things may seem a safe enough generalization, yet we shall see that it involves certain difficulties. Before considering the distinction we may naturally ask for a definition of the word *thought* itself. The thought with which logic has to do seems obviously connected with knowledge, and, if we examine the normal usage of the word in English, we shall be led to the view that this connexion of thinking with knowing is a universal characteristic of the word. We shall also see that we can give no definition, in the ordinary sense of that term, either of thinking or of knowing or indeed of certain words cognate with these.

In examining the meaning of a word such as 'thought' in philosophy, we must remember that it is a term of ordinary language. It may have acquired, rightly or wrongly, some different meaning in philosophical writings and we must be careful not to confuse the two. Thus in the philosophy of Berkeley thought comes to be used in the general sense of *consciousness*. This is alien to the normal use of language; but the philosophy of Berkeley and the allied systems have come so much into vogue, that we are in danger of forgetting this and falling into confusions.[1]

Let us then first endeavour to follow actual linguistic usage and take for granted the application of the name *thinking* to certain kinds of consciousness and its exclusion from certain other kinds. We shall then ask what is common to the things

[1] So also Locke's use of the word 'idea' [a] was alien and still remains alien to the normal usage of ordinary English And the vogue of the philosophy of Locke has popularized a confusion

[a] 'Some immediate object of the mind which it perceives and has before it' Epistle to Reader in *An Essay*, &c., cf Letter I to Stillingfleet. The word is used by Hobbes, but without emphasis, in this sense, e.g. *Logic*, i 5, §§ 8 and 9]

to which the name is applied. Thinking then, in its normal use, always has something to do with knowing.

There is some knowing, viz. the process of reasoning, to which the name 'thinking' is applied without any doubt. It is true that, according to an idiom of our language, when we prove by reasoning that the angles at the base of an isosceles triangle are equal we should not be said to *think* that the angles are equal, but to *know* that they are. We might therefore vaguely suppose that perhaps the *process* of reasoning is to be called thinking and that knowing is the result of such a process. This would be a mistake; for the process of reasoning is precisely the activity of knowing, as will become obvious when we discuss inference, and here, therefore, the ordinary idiom encourages a fallacy.

Thus then there is a certain kind of knowing, which must be called thinking if anything is.

But, on the other hand, there are activities, often, at least, called knowing, which would not be called thinking. If every apprehension of the nature of an object is taken to be knowledge, then perception (or at least some perception) and the apprehension [1] of a feeling would be knowledge; yet, according to the natural usage of language, they would not be called thinking.

This is probably because we regard thinking as an *originative activity of our own* (not that we have clear ideas either of activity or of origination), whereas we regard neither our perceptions nor our apprehension of feelings as originated by ourselves. On the other hand, the comparison of feelings, or of perceptions in general, we *do* regard as thinking, because we seem to originate these processes of comparison ourselves. Thus the apprehension of relations, either of some or of all of them, is accounted thinking, and probably the apprehension of universals is similarly always taken to be thinking, as depending on acts of comparison.

If then some perception [2] is knowing, there is some knowing, i.e. the experience of perceiving and feeling, which is not accounted thinking.

[1] Having a mental state, for instance a feeling, whether involving our apprehension of it or not, is not, as such, to be identified with the apprehension of the state For the mental state of desiring, e g, is not an apprehension of desiring, nor is it any kind of apprehension

[2] On perception and thinking, cf. §§ 13, 45, 146, 209, 263

Again, as not all that might be called knowing is thinking so also not all thinking is knowing.

The formation of opinion is undoubtedly called *thinking*; but, though based on knowledge, it is not knowing. Indeed, according to the English idiom already referred to, if we say we 'think' A is B, it is understood that we are not prepared to say we 'know' A is B. We are accustomed to say 'I don't know but I *think* so'. Opinion, in fact, is a decision that something is probable and, though not a decision of knowledge, is based upon our knowledge of the evidence available.

Further, there is something still more remote than opinion from knowing which would be called thinking, viz. questioning or wondering.[a]

When we have not got to the truth which we happen to be seeking, nor formed an opinion about it, but are wondering what is true and putting questions to ourselves about it, we should be said to be *thinking*. This certainly is the ordinary view, and it seems natural enough when we reflect that this wonder is the force which brings into play that thinking which is the investigation of a given problem.

In an inquiry, first comes this questioning activity when we set a problem to ourselves This implies that we know something of a given subject but are ignorant of some aspect of it which interests us. We put to ourselves questions. our attitude is obviously not that of knowing, nor even of having an opinion, but an attitude in which we wonder what the truth is. We may find the answer by experience or some other direct apprehension: or else we may see that the facts known to us at the start necessitate certain other facts and thus reach the goal by reasoning, a form of thinking which is knowing. If we arrive in either way at the knowledge which we seek, our undecided and interrogative attitude ceases. If our data are not enough we may either remain undecided, or we may form an opinion.[1]

[1] §§ 44, 46, 50, 51

[a Cf the fuller discussion in Part III, ch vi, § 295, &c His statement in regard to its neglect seems exaggerated. Sanderson, *Logicae artis compendium* (1615), Appendix II, ch 1, para 11, 'Suspicio sive Dubitatio est habitus, &c.'; Hobbes, *Leviathan*, ch 7, Locke, l c, iv. 2. 5 ('precedent doubt'); 'Et il y a du doute avant la démonstration', Leibniz, *Nouveaux Essais*, &c., iv, § 5; Kant, *Logic*, Introd, x et al]

That thinking has something to do with knowing may be seen also by considering the thinking which is not directed to scientific knowledge, for instance deliberation in regard to action or artistic production.

When a man is planning something he would certainly be said to be thinking. He is partly wondering and inquiring, partly learning and knowing, and partly forming opinions as to what would suit his purpose. Under this head would come the process of literary composition, the production, say, of a poem or a play. The imagination which belongs to such processes seems, as mere imagination, rightly enough not accounted thinking, though there is no thinking without imagination.[a] Remembering again can only be called thinking because it is more than mere imagination and involves apprehension.

We have found, then, included in thinking, activities of knowing of the kind which is not experiencing, viz. reasoning, apprehension of universals, and apprehension of relations between things experienced; activities also which are not knowledge, viz. inquiring, forming opinions, wondering and deliberating.

§ 10. We must now ask what is there common to these activities in virtue of which they are all called thinking.

Consider what is common to wondering and knowing. Wondering involves knowing. We know something of a given subject and we know that we do *not* know something else of it, or there would be nothing to wonder about. But wondering or questioning *is not identical with this latter knowledge.* Wondering presupposes the idea of knowledge and is unintelligible without it, because wondering is wondering what is true, although itself not identical with any form of knowledge nor with the desire for knowledge. Further in explanation we cannot go, for the inquiring attitude is unique, cannot be expressed in terms of anything else, is its own explanation. Similarly each of the other forms of thinking owes its existence to knowing and can only be understood through itself and through knowing. Both thinking which is not knowing and knowing which is thinking seem rightly called *activities* of consciousness [1] and of conscious-

[1] There is a possible acceptation of the term *consciousness* which would

[a] Νοεῖν οὐκ ἔστιν ἄνευ φαντάσματος, Aristotle, *Mem.* 449[b] 31. Hobbes continually insists upon this.]

ness which is not the experience called perception or feeling. This, then, is what is common to them: but it is a universal which is not confined to them; for willing and desiring, which are not thinking, are also activities of consciousness. But beyond the common universal of activity of consciousness, these forms of thinking have no further differentiation of it to unify them. What does unify them is the fact that the one, thinking which is not knowing, entirely depends on the other, knowing, and is only intelligible through it. This brings us to the general answer. The unity of the activities of consciousness, called forms of thinking, is not a universal which, as a specific form of the genus activity of consciousness, would cover the whole nature of each of them, a species of which thinking would be the name and of which they would be sub-species, but lies in the relation of the forms of thinking which are not knowing to the form which is knowing. Those which are not knowing arise from the desire to know or from some other relation to knowing and are unified with knowing by a special relation, depending in each case upon its peculiar nature and *sui generis*, intelligible and only intelligible by a consideration of the particular case. This therefore is a case where the ordinary idea of definition is not applicable Ordinary definition is a statement of the general kind (genus) to which the thing to be defined belongs and of the characteristics of the particular sort (species), that is the differentiation of the kind (genus), to which the thing to be defined belongs. Thus all species of rectilinear triangles are called by the same name in consequence of a common quality, the having three straight sides. This is what is usually called an explanation of the nature of the thing. In a given case we may ask again for a definition of the assigned genus and we may go on to similar questions about this new definition In this process we must obviously come to something which cannot be defined, in the given sense of definition, or the process would never end. Definition, in fact, itself presupposes the ending of the process in elements which cannot be themselves defined, in

make it inaccurate to call all thinking an activity of consciousness. If consciousness be limited to consciousness of some *object*, wondering would not be consciousness It involves the consciousness of objects but is not itself the consciousness of an object But then neither would desire be consciousness, for desire is not consciousness of the object desired nor of its absence.

so-called ultimate distinctions explicable from themselves alone. This does not leave our notions indefinite, because the nature of such undefinable universals is perfectly definite and is apprehended by us in the particular instances of them. In the case of thinking, several kinds of thing are called by the same name, not because of a quality common to them but because of the manner in which they are associated in reality through the peculiar relation of one of them to the rest and the nature of their dependence upon it. The same is obviously true of far less abstract universals such as colour and sound and even of *infimae species* such as blue and red.

But now, since the other activities to which the name thinking is applied depend upon knowing and to understand them we must have the idea of knowing, it might seem that, though there cannot be a definition of thinking (as definition is ordinarily understood), we must ask for a definition of knowledge. But the genus consciousness and its species knowing are universals of the kind just characterized; no account can be given of them in terms of anything but themselves. The attempt in such cases to give any explanatory account can only result in identical statements, for we should use in our explanation the very notion we professed to explain, disguised perhaps by a change of name or by the invention of some new term, say cognition or some similar imposture. We have in fact an instance of the fallacy of asking an unreal question,[a] a question which is such in verbal form only and to which no real questioning in thought can correspond. For there are some things which cannot be made matter of question. Indeed we cannot demand an answer to any question without presupposing that we can form an estimate of the value of the answer, that is that we are capable of knowing and that we understand what knowing means, otherwise our demand would be ridiculous. Our experience of knowing then being the presupposition of any inquiry we can undertake, we cannot make knowing itself a subject of inquiry in the sense of asking what knowing is. We can make knowing a subject of inquiry but not of that kind

[a A favourite point, derived partly from 'such a view is inadmissible and such a question therefore has no point or at any rate leads to an answer different from that which it expects', Lotze, l c, § 9]

of inquiry. We can, for instance, inquire how we come to know in general, or to know in any department of knowledge.

§ 11. In the preceding investigation we have followed actual linguistic usage. We have not disputed the application of the name *thinking* and it might seem that we could do nothing else but acquiesce in it, provided we *are* examining the meaning of a name. The meaning would be a fact, in the sense at least that the application of the word to certain things was a fact, which we simply recognize as existing. We have, for example, distinguished thinking from perception; a distinction which, in ordinary usage, has become a commonplace. It appears, for instance, in Browning's *Sordello*.

> 'Thought may take perception's place
> But hardly coexist in any case.'[a]

Suppose now that, with some modern philosophers, we contended that perception in fact involves thought and that the ordinary distinction is incorrect. If we criticized actual usage in this way, whether rightly or not, it would seem that we were appealing to other data than usage and so not really inquiring into the meaning of a name, since that must be determined by actual usage. We would appear to correct the application of a name because of our knowledge of the nature of the thing or quality signified, a knowledge which enables us to see that that nature is not present in some object to which usage attaches it. Accordingly, such an inquiry would seem to be not an inquiry into the meaning of a name but into the nature of a thing.

On the other hand, in our supposed knowledge of the nature of the thing meant by the name, in virtue of which we criticize the application of the name, it would seem that we must have started anyhow from the datum that the word is in fact applied to the given thing or quality.

[[a] The quotation from Browning was derived through H H Statham, *Architecture in the Poets*, ch I:

> 'Because perceptions whole, like that he sought
> To clothe, reject so pure a work of thought
> As language. thought may take perception's place
> But hardly coexist in any case,
> Being its mere presentment—of the whole
> By parts, the simultaneous and the sole
> By the successive and the many'—*Works* (1888), vol. 1, p. 114]

As a matter of fact, in such investigations we are sometimes examining the nature of a name and sometimes the nature of *reality* without any very clear idea of the relation of these two inquiries. In philosophy there is no denying that, however it may come about, we are interested in inquiring what we and other people really mean by certain terms, e.g. by *cause*, *force* or *thinking*; nor is this interest confined to philosophy. General biological theory, for instance, suffers very much because an inquiry is not undertaken into what the word *life* already means in ordinary usage and what guide there is to its meaning in the things to which people apply it.

Yet there seems to be something odd in the idea of such investigation at all. If we know English we do not inquire into the meaning of 'chair', 'blue', 'loud', or 'circle'. We are supposed to know the meaning from our use of the words. Nor should we seriously try to find out the meaning of the definition of a circle by examining various circles and asking what they had in common. Again, when we do appear actually to use such a method, as when Socrates asked 'What is Justice?', whether we think we are investigating the nature of the thing or finding out what people think it is (that is, the meaning of the name), we depend obviously upon knowing that the acts we are examining are all really 'just'. It would be no use abstracting from acts that are *not* just.

How then do we know that we have included no acts that are not just? If it is through a conception of the nature of justice, a conception by which we test particular actions, then we have already what we profess to be looking for.

It seems to remain that we can only take as data the actual application of the names: if so, we are at the mercy of usage. We cannot criticize it: even if we found in it anything apparently contradictory we should be helpless to decide. Again, what security have we that we make the right generalization and find out what people really mean? If we took a look at various ellipses, we should not be likely to find the abstraction which mathematics gives as their common definition, and in a look we might see no difference to speak of between a parabola and a hyperbola. Would it not be the safest way, as it is also the easiest, to ask people who use the word *what they mean*? This

would certainly be the right way in the case of the ellipses or different sections of the cone

§ 12. The solution of these difficulties, as might be anticipated, is to be found in what was said about abstraction,[1] namely, that there is a certain *feeling* of affinity between particular cases, the nature of which we do not clearly understand and cannot formulate. This explains the paradox that we are able to criticize the data on which we seem wholly to depend. The application here of the word 'feeling' is due to a proper instinct in language, in so far as it is realized that we have not here clear apprehension (or clear *thinking*) and therefore any such definite word as *knowing* is avoided. But really, feeling is not the right name nor has ordinary speech got a name for it. There are in fact certain conditions of our consciousness which are akin to thinking, akin to apprehension in general, but are neither. We shall have occasion later [2] to recognize their existence otherwise: we shall find, for example, a condition of consciousness which simulates judgement and opinion, but is distinctly neither. In general much difficulty is caused in logic by the attempt to express everything in terms of a clear thinking consciousness [a] These other conditions of consciousness are not recognized and so the phenomena which belong to them get misinterpreted. The logician here has naturally been affected by language. There is a want of terms for these conditions of consciousness; their existence is imperfectly indicated by the use of such a word as *feeling* and the impulse of the philosopher is at first simply to criticize this, because he realizes there is some confusion of thought in the employment of the word.

It is difficult to describe such conditions just because there is no proper language for it, but we can indicate their character by describing the corresponding facts of consciousness. There are certain principles which exist implicitly in our minds and actuate us in particular thoughts and actions, as is shown by their operation in our attitude to particular cases. But we realize them at first *only* in particular cases; not as definite

[1] § 5. [2] § 54.

[a] 'It is not necessary that everything should become reasoned knowledge Much is quite clear and plain which yet shrinks from definition,' Lotze, *General Physiology*, p 163]

general or universal rules, of which we are clearly conscious and by which we estimate the particular cases. On the contrary, there is no such formulation to precede the particular cases: the principle lives only in the particulars.[a] This can be understood by means of examples. Take, for instance, the logical abstraction of the syllogism. People argue quite correctly in particular syllogisms: they see the necessity of the conclusion from the premisses in a particular case; they are entirely unconscious of the general rule. Thus the abstract form of it, when first presented in logic, comes as something new, while their acquiescence in the form or principle depends on an appeal to their own consciousness in which they have been implicitly using it.

A more important example, both in itself and historically, is to be found in moral rules and definitions. It seems absurd to say that a person who is distinguished for the justice of his conduct does not know what is just, and he might be rightly indignant if you denied that he knew the meaning of justice; yet he might easily be puzzled if asked to define it. Now owing to the unity of such a principle implicit in our minds there must be an affinity in the cases where we do use the term justice. We know the just man *has* a principle, and always treat him as if he had; and yet, as we see, the principle lives for him only in its application in particular cases Indeed, the term application itself is somewhat misleading, because it rather implies that we first have the rule consciously and then apply it, which is not the case.

This affinity finds its first expression and recognition in the appearance of a common name. Often, as in the case of justice at present before us, this name has no clear, decided, definite meaning. It corresponds only to a general consciousness of affinity which has not yet arrived at a clear understanding of itself. When we begin to feel the want of a clear notion to correspond to the name and, what is perhaps more important, when we become conscious of the need of a definite rule in action, something, in fact, to make our judgements in regard to what is just more *reliable*, how have we to go to work?

[a Aristotle, *De Mem* 450a 1 al, Locke, *Essay*, iv 7, § 11; 'Now the animal, *qua* animal, does not exist: it is merely the universal nature of the individual animals' Hegel, *Logic* (Encycl.), § 24 (1)]

Obviously we must start from the facts of the use of a name, and shall be guided at first certainly by the name: and so far we may appear to be examining the meaning of a name. Next we have to think about the individual instances, to see what they have in common, what it is in fact that has actuated us. This seems by contrast to be the examination of a thing or reality as opposed to a name. At this stage we must take first what seems to us common in certain definite cases before us: next test what we have got by considering other instances of *our own* application of the name, other instances (more accurately) in which the principle has been working in us. Now, when thus thinking of these other instances, we may see that they do not come under the formula that we have generalized. If we feel satisfied (and it is only by thinking about the particular cases that we decide whether we are or not) that these really belong to the rule, are in fact just, we require an enlargement of our formula. The definition was too narrow.

Again, arguing from the formula itself, we see how it necessitates that certain cases should fall under it: but when we consider such cases we find that we do not in ordinary life apply the notion to them and, if in our moral consciousness we are confident that they do not accord with our principle, we have correspondingly to correct our previous generalization. This time the definition is judged to be too wide.

Observe that in every such step we rely upon the rightness of our use of the principle in particular cases; this does not mean that we are sure of ourselves in every case, but that there *are* cases at all events about which we are sure. This explains what in the Socratic attempt to find definitions would otherwise be paradoxical and inexplicable. The definition depends for its correctness on the assumption that the people who wish to find the definition know what is just already and know it in the most important way, from a practical point of view. Yet all the while they are supposed to be trying to find out what justice is; and so, with the ordinary analysis, the whole procedure seems irrational. We understand now that the people who are to be instructed by the Socratic method do know in one way,[a] and everything depends on their knowing in that way, but there is

[a] Cf. note [b], p 25]

another way in which they do not know and this it is which gives the investigation a rationale and meaning.

There is a further stage when we have, or think we have, discovered the nature of the principle which has really actuated us. We may now correct some of our applications of the name because we see that some instances do not really possess the quality which corresponds to what we now understand the principle to be. This explains how it should be possible to criticize the facts out of which we have been drawing our data.

§ 13. Let us apply these general considerations to the case before us, the distinction in the normal use of language between thought and perception. When the exclusion of perception from thought is called in question we have the paradox of a challenge of data. It being understood, though not necessarily after a clear investigation, that the apprehension of universals is *thinking*, we find it contended that this apprehension is found in perception [a] but that this fact has been overlooked. Perception in consequence has been erroneously distinguished from thinking.[1]

But there is a simpler ground for recognizing thought in perception. We are sure that reasoning is thinking, that comparing is thinking, processes which involve both the apprehending and inquiring attitudes. That being so, these are our certain data and in these activities we recognize consciousness concerned with knowing. We recognize also that we think of such processes as originated and conducted by ourselves—originative activities we may call them. We see this operating in our view of feeling; for, though it is consciousness, we distinguish it from thinking; and again we see the distinction in our ordinary disinclination to call perception thinking because

[1] We shall see reason later to consider whether this is really justified and we shall challenge the view that in ordinary perception the universal is really apprehended as such. (§ 147)

[a] Ultimately from Aristotle, '*καὶ γὰρ αἰσθάνεται μὲν τὸ καθ' ἕκαστον ἡ δ' αἴσθησις τοῦ καθόλου ἐστίν, οἷον ἀνθρώπου*', *An. Po.* 100[a] 16 Wilson is doubtless referring to the current Oxford idealism. 'The simplest act of perception is a judgement' was almost a commonplace then, cf. T. H. Green, *Works*, II, pp. 170–2; and 'In all human perception thought is present, so too thought is the universal in all acts of conception, recollection, &c.', and again 'Man therefore is always thinking, even in his perceptions; if he observes anything, he always observes it as a universal', Hegel, l. c., § 24 (1).]

of the element in it which we seem in no way to originate; an element also which seems to be what is mainly important in the matter.

Consider a sensation and our knowledge of it. The mere having a sensation, though it is consciousness, is not knowledge and must be distinguished from apprehension. To know what a sensation is I must recognize in it a definite character which distinguishes it, e g, from other sensations. I recognize, let us say, that it is a pain, and then again a burning, or a pricking, pain, as the case may be. But this implies comparison of pain with other sensations and other pains; and thus by the activity of comparing we go beyond the mere passive state of being pained, and this activity we are sure, *ex hypothesi*, is thinking. Thus though the sensation is not originated by us we require an originative act of consciousness to apprehend it.

The same is true of other objects of consciousness in perception, which we do not ordinarily suppose to be sensations, e g. objects seen as extended in space. Whatever passive element there is (and we certainly do not suppose ourselves to originate the shape and colouring of things) the apprehension of the characteristics of what we perceive involves a comparison; and comparison we take to be thinking. If this is so, the knowing part of perception would after all be thinking and the distinction whereby the knowing in perception was excluded from thinking, would only be a popular inaccuracy.

Yet here we must be careful to avoid an overstatement. It is not fair to condemn the ordinary view wholly, nor is it safe: for, if we do, we may lose sight of something important behind it. Distinctions current in language can never be safely neglected. In what we ordinarily recognize as comparison we have before us two objects at least and apprehend each of them distinctly. As we should say, we are thinking of the nature of both. But, in the apprehension of the definite quality of a given sensation, we are as a rule not consciously comparing it with the quality of another sensation which we distinctly remember and so have before us. We are not concerned primarily with the qualities of other things, but only with the quality of the object before us: our interest is in *it* and not in them and the fact seems to be that we have a consciousness of it as having a quality differing

from that of other objects in general, but *not* a consciousness of other objects in detail. The particular qualities then of other things being in abeyance in this way and our interest being in the distinctive quality recognized in the object, we can understand how the fact that there is a comparison comes to be overlooked and how we seem to be merely appreciating the quality of the object by itself In short, we are really comparing but do not recognize that we are. This then shows that the comparison in this case (though obviously necessary to recognizing the quality of the object as something distinct in itself and not just to be confused with anything at all) is different from ordinary comparison, and requires special recognition.[1]

[1] The subject of the distinction of thought from perception will be resumed later in the discussion of universals, § 146.

III [a]

LOGIC AND COGNATE STUDIES GENERAL AND SPECIAL LOGIC

§ 14 BEFORE considering the distinction between logic as a study of thinking and the sciences as special studies of things, we may make a provisional division within the province of thinking itself In ordinary speech we distinguish logical inquiry from the inquiry into questions which we call grammatical, metaphysical, and so forth We feel that there is a certain affinity between logic and other studies which may be said to deal with thought as their object, yet we are aware also of a difference between it and them as well as between them themselves. These differences we shall now provisionally consider, in order if possible to determine more clearly what it is that we mean when we speak of a question as being a question of logic

We shall also ask provisionally 'In what sense is logic an *a priori* subject, as pure mathematics appears to be?' and again 'What is the ground for the familiar division of logic into pure and applied logic, a distinction, if not suggested by, at least analogous to a popular division of mathematics into pure and applied, or pure and mixed, mathematics?'

§ 15 The nature of what logic investigates is what prescribes its method It is always the special nature of the object investigated which determines the method of investigation. We cannot settle the right method of any science, without attending to the special character of its objects Logic being an activity of thinking must presuppose the forms of thinking, because it must use them, and therefore its study of these forms cannot be in the way of either doubting their validity or establishing it For in such an examination logic would have to presuppose the validity of what it would be criticizing. All it can do is

[a This chapter was meant to be revised, but was left alone except §§ 22–3]

to disentangle the universal from the particulars in which it is manifested; in other words, in this logical activity, thought itself is but recognizing its own universal forms. This is why some parts of logic are so simple: for at all events such forms as are the presupposition of any knowledge whatsoever must be simple and obvious when once pointed out There is thus a certain appropriateness in Aristotle's term *Analytics*, and it is significant that in grammar a procedure like that of logic is called the *analysis* of sentences. A qualification, however, must be made Analysis is often understood to imply a whole of which the parts are explicitly known before the analysis,[1] but logical elements are for our ordinary consciousness only implicit: we use them without reflecting on them, just as we use grammatical distinctions long before we have any knowledge of grammar.[2] Logic does not merely analyse it makes explicit what was implicit

§ 16 There is a sense in which both the logical forms and the method of logic may be called *a priori*[3] It is true that they are not actualized as matters of consciousness till we have experience of particular thoughts; but their validity is not derived from single instances That is to say, they are not learned *a posteriori* from instances regarded as their evidence and therefore liable to correction by further experience of thinking ⟨On the contrary they belong to the subject as subject and so must condition every part of the thinking experience. The object in experience which we think about cannot contradict them, for the forms of thought are properly forms of thinking and not of 'what we think' or 'what is thought' (even from an idealistic point of view), and so either the forms of what we think, that is the object, are irrelevant to the forms of the thinking, so that there can be no contradiction; or, if there could be any contradiction, it could only arise from this,

[1] § 5 [2] Cf Leibniz, *Nouveaux Essais* [a] [3] §§ 6 and 243.

[[a] No reference given Perhaps he was thinking of 'Il est vrai qu'il ne faut point s'imaginer qu'on puisse lire dans l'Âme ces éternelles lois de la raison à livre ouvert mais c'est assez qu'on les puisse découvrir en nous à force d'attention à quoi les occasions sont fournies par les sens', Introd., and the passage about the Chinese language ending, 'C'est ainsi qu'on possède bien des choses sans le savoir' Book I, § 21 Cf Lotze, *Logic*, § 358]

that the forms of thinking might necessitate something in the object to be thought about. Now, if that were really possible, we could not intelligibly represent any object as contradicting them, for to do so we must think about it and, if it possessed attributes contradictory to what the forms of thinking demand in it, it simply could not be the object of thought. Similar considerations apply to the forms of apprehension in general.) Not only are the forms *a priori* in this sense, but so also is the method of their investigation For, though first recognized in particular instances of their use, they are at once seen to be independent of them, since otherwise we could not go beyond the instances analysed, except by way of conjecture Now we have a certainty of their universality which is incompatible with an *a posteriori* origin Thought can recognize its own laws by reflecting upon itself

§ 17 Grammar cannot be simply distinguished from logic on the ground that it deals with language while logic deals with thought Grammar deals with language only as the symbol of thought, as enabling us to understand thought when expressed in words Thus it seeks for general forms of expression which have the same kind of indifference as logical forms to the specific content expressed, and sometimes these general forms coincide with the logical forms Their principal difference is that logic deals with thought quite generally and in abstraction from any particular linguistic mode of expression (though it is true that logicians may be greatly influenced by the forms of expression in their own language), grammar treats of forms of thought so far as they have become recognized in linguistic forms Forms of thought get direct recognition in grammar when in the language studied there happens to be a general word-form corresponding to them or some kind of general rule For example, nouns have not all the same termination in a given language, yet they all stand under the same set of rules in relation to verbs Forms of thought get also an indirect recognition when the different species into which the form subdivides have special word-forms corresponding, though the general form itself which comprises them all has not Clearly then logic and grammar so far agree in that both involve a study of forms of thought applicable to all kinds of objects. Grammar however

is the more limited in scope, because it studies them primarily only so far as they have received expression in the general word-forms of a given language.

§ 18. If psychology meant the study of mind in general, logic would only be a part of it, but then the same would be true of ethics, politics, aesthetic, the philosophy of history and the theory of literature In practice psychology has not this general scope; it has become a special study of a scientific character, and in some ways is experimental and empirical like the empirical sciences Psychology in this narrower sense of the word differs from logic by including subjects which logic excludes, for example the practical and emotional aspects of consciousness and questions about the physical conditions of consciousness The real difficulty in distinguishing the two comes in those departments in which they have in some sense a common object, for psychology generally includes some study of the mental processes connected with knowing and believing, processes such as having apprehensions or forming judgements and opinions. It must be confessed that the attempts often made to define the province of psychology in distinction from logic and other cognate subjects are vague and unsatisfactory, for the truth is, success depends upon some knowledge of logic and metaphysics, in which subjects psychologists are not always at home

In every act of thought we must recognize a twofold aspect. In the first place, it appears as an event, when regarded as the activity of a particular thinker because it happens at a particular time, and in a particular time-order with reference to other events Again it is connected in this time-order with all those occurrences, physical or mental, which may be said to contribute in any way to the fact that the person thinking thinks a particular thought at that particular time, for example the thinking suggested by the sight of some memorandum we have made. But there is another and a totally distinct aspect in every thought, ⟨this aspect is simply the thinking as thinking about something, an apprehension of something, whether accompanied or not by a conjecture or a question about it.⟩ This aspect is the same whenever the thought occurs and is wholly unaffected by that other aspect of the thought as an event. It is something complete in itself, wholly independent of the time-

order as such and of anything which conditions that time-order as a mere time-order.

It is quite true that ⟨this aspect of the thought as apprehension of a fact connects it with other thoughts as also being apprehensions, and through the nature of the facts apprehended; it is true also that⟩ this very connexion (which we may conveniently describe as a connexion of the contents of the thought) may condition the occurrence of a given thought as a subjective activity at a given time. Nevertheless this connexion of the thoughts ⟨in respect of what is apprehended in them⟩ is not such temporal connexion at all. It may influence but it cannot be influenced by the temporal order To take an example, we may have the thought of a triangle. Now the content of that thought necessitates a property of the triangle and we, apprehending the first content, may apprehend afterwards that it necessitates the second The reason of that lies in the objective relation itself This, though apprehended in time, is not a temporal relation, and in it the two elements distinguished as corresponding to the two acts of thought are not related as before and after This distinction appears in every process of learning or inventing a proof; the various steps are apprehended by a particular thinker in a certain order in time, it 'takes him time' as we say to discover the argument, the amount of time being conditioned by his mental capacity and his physical state Here then the acts of thought seem to present themselves as events bearing an essential relation to time, and even causally connected with other events, ⟨they may possibly even have the appearance (though that is a misinterpretation) of being connected with one another in the temporal way of cause and effect⟩ Now though this may be so, yet what the thinker in this process understands, the meaning of the argument, does not as such enter into any of these temporal relations That meaning obviously lies in the apprehension of the premisses and of their connexion with the conclusion. The apprehension of a premiss is something complete in itself and, whatever the temporal occasion of the apprehension, what is apprehended is, except in a sense to be presently explained, entirely free from temporal connexion and its temporal character may therefore be ignored. Similarly the connexion of the premisses with one

another and with the conclusion is not temporal in the sense that it has anything to do with the time taken to apprehend it The relation of premisses and conclusion ⟨as thoughts about something,⟩ is not that of cause and effect, nor even a relation of succession in time The premiss is not an event preceding the conclusion, for then it would be over and gone when we reach the conclusion, whereas it is the presence of the premiss which is the condition of our having the conclusion at all. Premisses and conclusion are, in their essence, in no time relation and, if we tried to represent them as in time at all, we should have to represent the various apprehensions as completely synchronous in an indivisible time

Now logic is concerned with our thoughts not as events but with that side of them which is not event,[1] it is concerned with ⟨their character as apprehensions of objects, or as conjectures and opinions added to those apprehensions; that is, it is concerned with⟩ the truth or falsehood of what we think Logic never considers the way in which we come to think a given thought at a given time, except so far as the process is entirely within ⟨the activity of apprehension as such,⟩ and dependent therefore on relations, which are entirely non-temporal, ⟨between the thoughts, apprehensions and so forth concerning a given object matter⟩, and not upon anything belonging to their character as events It is true that we may trace such connexions between the contents of our thought in an order of time in our own minds, but in our apprehension of them the idea of ⟨this subjective⟩ time and everything temporal ⟨which does not belong to the nature of the object thought about⟩ is abolished.

This gives us a distinction between logic and psychology in so far as both deal with thought[2] Psychology treats thoughts as events and, *qua* psychology, is mainly concerned with their time-order, often indeed it has to regard the merely temporal conditions under which the content of a given thought becomes a matter of consciousness to a given thinker at a given time.

[1] Mr Bradley gets into great confusion about this character of thought. Cf § 122

[2] The word psychological is too often used in a vague and confusing manner even in logical treatises See, for example, Sigwart's *Logik*, vol 1, § 32 (p 203, line 9 of German text 1873) [' No judgement is uttered without a psychological ground for its certainty ']

Moreover, ⟨besides certain physiological conditions which are absolutely nothing to logic,⟩ psychology is occupied with ⟨the temporal conditions of⟩ such phenomena as memory, association of ideas, imagination in general, ⟨treating a side of them which does not belong to logic⟩ and with processes necessary to perception, ⟨which logic as such does not consider. Nor, finally, is logic concerned with what is paradoxically called the unconscious mechanism of consciousness⟩

§ 19 It must not be supposed however that all consideration of the subjective time-order is necessarily excluded from logic. Logic originated in the reflection of the mind on its own subjective activity, and is essentially concerned for example with inference as a subjective act As such, inference represents an advance in knowledge implying a contrast with a previous state of mind, before that realization of thought which is the result of the process In the statement, too, with its distinction of subject and predicate, a time-order is, we shall see, involved This consideration of the time-order is necessary for logic, whatever psychology may from its point of view have to say, and nothing whatever is here borrowed from psychology as a science. But the distinction of before and after is treated quite differently in logic and in psychology. ⟨In the distinction, for instance, of subject and predicate, logic is concerned with the mere fact that the apprehension corresponding to the one precedes that which corresponds to the other but not with anything else relating to the time; not with any reason for the fact and certainly not with any *temporal* reason for it nor, in general, with anything conditioning the temporal series, *qua* temporal⟩ In the case of inference logic is concerned only with such reasons for the time-order as lie in ⟨the nature of the apprehension itself⟩ If we ask whether the conception of a figure whose interior angles are together equal to two right angles could *precede* the conception of a three-sided rectilinear figure, the answer depends entirely on the matter of the conceptions themselves, in other words on the relations of what is apprehended

§ 20 ⟨Though metaphysics has no generally accepted definition, the word is in frequent use and this is so far justified inasmuch as it corresponds to a certain affinity, felt rather than clearly understood, in the subjects to which it is applied Thus

we feel that certain problems are rightly called metaphysical, though we may be at a loss to define metaphysics; just as we are sure that a certain act is generous, though we might find it difficult to define generosity so as to draw the line between it and justice. This is why philosophers are more likely to agree as to what questions should be called metaphysical than upon any definition of metaphysics. The vague popular conception of it seems to be that it is not science but philosophy; and further, not *any* philosophy but some higher kind of philosophy. Logic, in a strict acceptation, and ethics and politics may all seem not to be metaphysics, yet we find questions occurring in logic and also in ethics which we should naturally call metaphysical. Examples of such questions are, the reality of universals, the nature of causation, the problem of freedom and necessity. The word metaphysic originated in the name given, by some unknown arranger of Aristotle's works, to the treatise which Aristotle himself spoke of as concerned with *First Philosophy* [1] and the name only means that the treatise in the order of his system was considered to come 'after *The Physics*', although Aristotle's *Physics* would itself according to our modern usage be said to be mainly metaphysical

The popular idea of metaphysics corresponds so far with the contents of the Aristotelian treatise, inasmuch as he thought this first philosophy [1] to be a higher kind of study to which his *Analytics* was a preliminary, and as moreover he does not include ethics within it He also distinguished it from the sciences, as treating of Being in general while they each consider some special part of Being. Thus Aristotle's metaphysics investigates the elementary or fundamental principles,[2] and God as the supreme and most perfect Being) If we now try to formulate what is essential in the affinity we feel between metaphysical problems, perhaps it is truest to say that metaphysics has for its ultimate object and ideal a complete understanding of reality, and that not as opposed to the thinking subject but as including the subject. It seeks at all events a completer understanding than is contained in the sciences and so it is bound to let no assumption or presupposition pass unexamined. The sciences are also inquiries into the nature of reality, for they assume

[1] πρώτη φιλοσοφία [*Ph* 192ª 36]. [2] ἀρχαί.

conceptions and statements which they use and develop, but which, *as sciences*, they neither examine nor criticize. Geometry, for instance, assumes space, but, *as* geometry, does not criticize it. Generally, science assumes the reality of objects of a knowing or perceiving subject and accepts a certain opposition between the two; these presuppositions metaphysics examines. Logic, such as Aristotle originated, studies thought and brings to light its presuppositions, but still it makes assumptions which, as logic, it does not investigate. Examining thought as the subjective element in apprehension and so assuming the difference of subject and object, it assumes that in experience the subject can know ⟨that the object is there and also⟩ something about it, it assumes in short the workings of thought as *data* and arranges them. The criticism of these assumptions, ⟨whether explicitly faced in logical treatises or not,⟩ is metaphysics Metaphysics is bound to raise the whole question of the nature of the relation of thought to reality and therefore an idealistic theory of reality such as Berkeley's belongs to metaphysics and not to logic Similarly with subjects usually included under the title of theory of knowledge We may say then shortly · ⟨science studies the objective side of thought, logic the subjective⟩, metaphysics studies both and the relation between them But this is not enough; metaphysics studies them in a manner different from that in which they are studied by logic and the sciences Metaphysics ⟨does not propose to add to the sciences within their own limits; for example it does not study geometry in order to develop new geometrical theorems it tries to complete the sciences in another way, a way in which they cannot help themselves⟩, by understanding both their presuppositions and the organic connexion of the different parts of reality which are severally studied by them

§ 21 We can now see how the study of thinking, of the being of the apprehending thought, may go beyond a strictly logical activity and comprise subjects usually contained under the term theory of knowledge, for example, the validity of thought in relation to reality (a problem which involves metaphysical questions proper) or the reality of the universal, and the possibility of getting knowledge from perception, two problems which have also some relation to psychology. The association

of ideas seems to belong peculiarly to psychology, yet it comes naturally into any discussion of knowledge. All such subjects are united by the desire to investigate thought as *true*,—this is what relates them to logic, and though not parts of logic proper, they are so connected with it that the logician is obliged to consider them, just as the geometrician must study the theory of proportion, though it belongs to the province of pure quantity.

On this account we must never put aside a question on the mere ground that it is metaphysical. It may be as necessary to logic as the theorems of one science sometimes are to those of another [1]

§ 22 [a] A distinction is sometimes made between 'pure' and 'applied' logic, which seems to be partly a legacy from an old mistake about the theory of the syllogism and partly due to an inaccurate distinction made in the sciences The terminology is borrowed from the division of mathematical science into pure and applied mathematics This again is grounded on the fact that the theorems of geometry and of the calculus of pure quantity are applied to the geometrical and quantitative relations of bodies in movement or in equilibrium [2]

Now the old view of syllogistic inference was that it formed the general method of all demonstrative inference whatever, so that the methods of the demonstrative sciences would be merely an application of the rules of the syllogistic theory; they were accordingly called deductive sciences. Hence, perhaps, may have arisen the idea that the logic of a particular deductive science, i e the logical theory of its method, would be the application of the general theory of demonstrative inference to its special case. Similarly, when the theory of induction began to have

[1] Cf § 4 [2] § 367

[a] §§ 22–23 A digression primarily directed against Lotze Wolf divided Logic into *Theoretica* and *Practica*, a distinction resting on the old Logica Docens et Utens Kant used the terms General and Special Logic, probably deriving them from the distinction between General Law or the Law of Nature and Special Law in Jurisprudence Hegel uses applied logic for Physics and Psychology, *Works*, vi, p 49

In the 1909 course Wilson added 'In the general treatment of the subject a serious error has been caused in the theory of inference, inasmuch as an attempt has been made to find a quite general process of inference based upon mere *abstract* considerations about the general form of propositions' He was referring to symbolic logic (infra, p 59)]

more importance in logic, it was perhaps thought that there was an applied inductive logic of a special inductive science.

But even if this view of the syllogism and of the deductive character of the demonstrative sciences were right, as it is not, the distinction of pure and applied is inaccurate, confused and quite worthless even in the sciences from which it is borrowed. For instance, in the application of geometry to mechanics the geometrical theorems remain exactly what they were in pure geometry There is no applied geometry which is a special geometry of mechanics, the only geometry in the applied geometry is pure geometry If anything could be called applied geometry, applied algebra, &c., at all, it would have to be for instance the science of mechanics itself as a whole

But this, again, is quite inaccurate The application of the general theorems of a science to particular instances never produces a new science. The so-called applied mathematical sciences are new sciences as compared with pure mathematics, and they are so because they add to pure mathematics scientific principles of their own which are not in any sense derived from pure mathematics The term 'applied mathematics', used to describe the whole nature of these sciences, involves a very grave confusion Similarly, if we allow the untrue assumption that the demonstrative sciences are 'deductive', in the technical sense of the word, the only logic of them would be the logic of the syllogism, the so-called 'pure logic', just as the only geometry in 'applied mathematics' remains pure geometry. There could be nothing which could be distinguished as an applied logic from the pure logic

But it is quite untrue that the syllogistic logic presents the general form and rules of all demonstrative reasoning, as we shall see hereafter

Again, even if the syllogistic theory of a general form and general rules of all inference whatever were replaced by the theory of some other general form and general system of rules of which every particular inference was a mere application, the first objection would hold and the idea of an applied logic would be altogether incorrect.

§ 23 The distinction of general logic and special logic seems much more promising. It looks as if there might well be, for instance, logical considerations applying to reasoning in general

and also logical study of special forms of reasoning peculiar to different departments and to special sciences. Nevertheless we must abandon altogether the idea of a general logic which could be developed *a priori* without a study of the processes of reasoning in the sciences. We shall see in the sequel that we can only find out the true nature of inference, and even the true meaning and position of the syllogism itself, by considering the actual methods of the mathematical sciences. Anything which could be called a general logic of inference can only arise in this way, and in the general treatment of the subject a serious error has been caused by the attempts which have actually been made to find a quite general process of inference based upon mere *abstract* considerations about the general form of propositions.

On the other hand, the sciences, for instance, which are demonstrative, while they have certain common characteristics of method, have special methods of their own, which they themselves discover These depend upon the special subject-matter of the sciences and therefore could not possibly be anticipated by the logician, or derived from any general characteristics of inference. These admit of logical study, which may be rightly called special logic in contrast with the study of the common characteristics of inference, which may be called general logic, or a part of general logic But, in the nature of the case, such special logic would not be an application of the general logic of inference, nor derived in any way from it.

Further, a particular science or set of sciences may employ some special conception which is not found in other sciences. Such conceptions may be presuppositions of the science or sciences, but are in no sense investigated by the sciences themselves. Their examination, then, would belong not to scientific thinking, but to what may be called, in general, reflective thinking or philosophy, though not to that form of reflective thinking which is logic. For these conceptions, of which cause is an example, as they belong to the nature of the object, are not logical conceptions (which belong to the *apprehension* of the object) and, accordingly, they are not the subject of logic but of the kind of philosophy called metaphysics Logic, however, has to attend to these conceptions in order to see whether they may determine anything in the form of the apprehension.

IV

LOGIC AND THEORIES OF KNOWLEDGE AND REALITY

§ 24. To return to our provisional definition of logic as some kind of study of thought. There are other studies besides logic which may be said to deal with thought as their object or at least to include a study of thought; such studies for example as Grammar and Psychology, of which we spoke in the last chapter. There is however a serious and perhaps unexpected difficulty which threatens to confuse the provinces of logic and all science whatever. This difficulty arises from the distinction often implied when logic is defined as the study or a study of thought, the distinction of thought from things or from reality. It probably seems that this distinction enables us to separate off logic from the mathematical and empirical sciences For while the sciences think about *things*, logic thinks about *thought*. Yet this distinction apparently presupposes that things are somehow in their essence independent of consciousness. It rests doubtless upon the ordinary and popular attitude to the world But a doctrine has appeared in philosophy which makes it impossible to acquiesce in this apparently obvious distinction without very careful consideration. That doctrine is Idealism. Subjective idealism, like that of Berkeley and Hume and their more recent followers, may indeed be said to identify the reality and the thought (as thought is understood in this school), for it makes the perceived thing entirely a part of our consciousness and existing so long only as some one is conscious of it. Absolute idealism, like that which appears in the writings of Green, professes not to make reality subjective in this sense and yet holds that reality is somehow identical with or constituted by thought If this were so, the distinction between logic and the sciences, which seems so clear, could not stand in the form in which it has been stated, for science as studying things would necessarily be studying thoughts.

§ 25.[a] It may well be supposed that such difficulties exist only for idealism and are no concern of those who do not accept it in one or other of its forms. Yet we certainly cannot escape them by adopting the ordinary realism, which is usually opposed to it and gets philosophic expression in the works of such a writer as Locke. This realism, though it holds that things are entirely different from our thought and independent of it, is associated with a theory of how we come to know the existence of things and their properties, which ends in the admission of what it set out to deny. The mind, it would be said, gets knowledge of things different from itself, or any state of itself, and the thing is certainly not a state of consciousness How, then, do we know the existence of such things? Knowledge arises from perception. Perception again is described as an effect in our consciousness of the action of things on our bodily organs. This effect is what Locke calls an 'idea', and it is sometimes vaguely called an 'impression' Why is this knowledge? Because this effect (or 'idea') represents the object, or (better) is a copy in consciousness of the object We naturally ask how we know that it is a copy; for it is not enough that the idea should be a copy, we must know that it is a copy or it would be of no use for the purpose We can only know that a copy is a copy by comparing it with the original, and to do this we must apprehend the original itself But, *ex hypothesi*, it is the copy only which is before us in consciousness, and further, if the original were before us and apprehended, the copy would be superfluous Again, the theory cannot guarantee that the supposed effect in our minds, the 'idea' or 'impression', is at all like the thing which is said to cause it; and, worse than this, it cannot guarantee that there is any original, and, worse again than this, it cannot even account for our having the idea that there is an original Thus ordinary or empirical realism ends in the subjective idealism it was intended to avoid. Indeed, it was by reflecting on Locke's theory of knowledge and developing its consequences that Berkeley was led to his own doctrine.

[a Wilson gave much thought to this apparently simple section He said 'I have tried to put what seems the true ground of Berkeleianism, though Berkeley himself never, so far as I know, got his own position with such clearness' (Letter to F H Hall, 7 VI 14)]

For our purpose these difficulties are not so interesting as the fact that this theory after all unconsciously involves the consequence, which subjective idealism expressly states,—viz. that the only object the mind can apprehend, so far from being something independent of consciousness and 'outside' it, is something which exists only within consciousness as a state of it, as much indeed a mere state of it as is pleasure or pain. This result leads to a more general principle with which it is not identical—that the *real* object is not directly present[1] to consciousness, or that we are not conscious of the 'real' The empirical theory of reality indeed, affirming that the existence of things is wholly independent of thought, necessarily leads either to subjective idealism or to scepticism of the object These *things* are not objects of consciousness, we never can be conscious of them.

§ 26 Ordinary realism then results, through Locke's philosophy, in a theory which necessarily involves the assumption that all objects we seem to be conscious of are merely mental existences If we say that what is directly present to consciousness must be 'within' consciousness, there is a danger that this should be taken to mean that what is directly present to consciousness is a state or a part of consciousness. So Berkeley takes it for granted that what we are directly conscious of (or, as he would say, 'perceive') is merely mental The only question between him and his opponents is whether there is something else besides this merely mental 'something'. And as Locke, whom Berkeley has in view, does take it for granted that what is immediately apprehended is merely mental, Berkeley is justified in getting from this assumption the general conclusion he arrives at, though he arrives at it, in fact, by an unsound argument.[a] The word 'within' is a metaphor from space, and

[1] The phrase 'directly present' is given for purposes of polemic, as that which would probably be used In itself it is liable to an obvious criticism

[[a] Referring to 'But, say you, though the ideas themselves do not exist without the mind, yet there may be things like them whereof they are copies or resemblances, which things exist without the mind, in an unthinking substance I answer, an idea can be like nothing but an idea, a colour and figure can be like nothing but another colour or figure If we look but ever so little into our thoughts, we shall find it impossible for us to conceive a likeness except only between our ideas' Berkeley, *Principles*, § VIII. The argument depends upon the assumption that two things like one another must have the same kind of existence]

the statement that what is directly present to consciousness must be within consciousness is simply a definition of what the word 'within' means in this reference to consciousness. The word 'within' adds nothing to the idea of 'direct presence to consciousness', and cannot therefore imply in addition that this means state of consciousness, unless that is already necessitated by the idea of direct presence to consciousness. Subjective idealism then holds, whether this is expressed or not, that what is directly present to consciousness—what we are 'immediately conscious of'—is something mental and indeed a state of the subject's consciousness, and this is treated as something self-evident and merely to be taken for granted Absolute idealism, on the other hand, though not making the object identical with subjective thought, appears to make it essentially a realization of thought, of thought considered as somehow objective. And thus it seems common with Absolute idealists to speak of the object as 'content' of thought [a]

§ 27. Something of the same sort appears where we should little expect it,—in our ordinary way of speaking about thought; that is in language not technical nor peculiar to philosophers, but in the ordinary and normal use It is not due to the conscious adoption of or even to the influence of any form of idealism We distinguish the activity of thinking from '*what* we think'; the latter we regard as a part of the whole fact of thought, and indeed the most important part of it By our 'thought' we certainly mean '*what* we think', as well as the thinking of it, and indeed mainly the former At the same time, while we say we think *about* things, we usually distinguish the thoughts which we say we think from the things we think *about*. Certainly, in the ordinary unphilosophical thinking to which this ordinary

[a e g B Bosanquet, *Essentials of Logic*, ch 3, § 2, where the matter and the content of knowledge are identified by contrast with the form 'We are chiefly interested to know what a thing is, viz its content, which is no more objective than it is subjective,' Hegel, *Logic*, § 42 (3) 'Content' is a translation-word (*Inhalt*) in English and is therefore likely to be found in the later English idealists In German 'Inhalt' in this sense is not confined to idealist philosophers, e g 'Das Abbild selbst als das Resultat der Erkenntnissthätigkeit ist der Inhalt der Erkenntniss' Ueberweg, *Logik*, § 2 The word is now commonly used in English to indicate what any one is thinking, without further statement of its elements and without begging the question of the relation of the mind to its object]

and normal language belongs, people do thus distinguish 'what they think' (or the so-called 'content'[1] of their thought) from the things they think about. But what are the consequences of this language, strictly taken? It would ordinarily be said that the thoughts which we think are not the things—we do not think the thing, but think about it. But what *do* we think about the thing? What is this something which is not the object or thing, but 'of' or 'about' the object? If it is no part of the nature of the object, it would seem as if to think it '*of*' or '*about*' the object would be a delusion (Nor can we avoid this by making our thought—i.e. 'what we think' about the thing, a mere mental copy of the thing's nature, for what we think of the thing is not such a copy—e.g. what I think of the red object is its own redness, not some mental copy of redness in my mind. I regard it as having real redness and not as having my copy of redness.) If we ask in any instance what it is we think of a given object of knowledge, we find it always conceived as the nature or part of the nature of the thing known. What we think of a thing which we know is what we apprehend *in* it and must be part of its nature. If it were not, we should not be knowing. It follows, then, that if we continue to hold that 'what we think' about a thing is a part, and a main part, of the whole activity of thinking, we must also hold that this main part of our thought or thinking is exactly the nature or part of the nature of the thing thought about. Now, whether this leads to any form of idealism or not, it certainly did not originate in idealistic philosophy—on the contrary, it comes from the very way of speaking which is natural and habitual with those who do not believe in any form of idealism. It is independent of any theory we may hold as to what constitutes the reality of the object—whether e.g. it is merely existent in consciousness or not. It is simply the result of calling 'what we think' (or the definite something which we think) 'thought', or 'content of thought'—i.e. of making it an integral part of the whole activity of thinking.

§ 28.[a] Now, if we have been led by such considerations as the

[1] Observe that 'content of thinking' is metaphorical. It adds nothing and may mislead.

[a] Originally a criticism of Mansel, *Prolegomena Logica*, ch. vii.]

above to include the object somehow in thought, we should have in some way to recover the distinction of subjective and objective, which is really the main inspiration of that empirical theory of reality which otherwise seems so inadequate In the nature of the case there would be no object which is mere object, for *under the present hypothesis* the object for us would be, as an aspect of or element in actualized thought, the object of a subject, the one being correlative to the other. The two sides, then, would not be distinguished any longer as thought from not thought but taken as constituting together in their inseparable unity the actual particular thought. The real thought would be not one side of this relation, but both sides together; the elements, though inseparable, being nevertheless distinct.[1] It would follow that we cannot found the distinction of logic from science on the distinction between thought and something which is not thought, but on some distinction subsisting within thought itself Now there is a distinction on which the definition of logic is sometimes founded, which seems (whether intentionally or not) to be of this kind. Logic is sometimes said to deal with the 'form' of thought as opposed to its 'matter'. These terms are metaphors and cannot be a final explanation of anything, but the distinction has the characteristic that it appears to be made within consciousness and within thought. It probably originated from an instinctive tendency to put 'what we think' within thought or thinking itself, but also, probably, without any clear consciousness that this might result in putting the object itself within thought. The total reality, then, of thought would be this inseparable unity of subject and object, and thought would be not one side of this relation, nor the mere attitude of the subject to the object, but both sides in their unity. On this view, the distinction between logic and science would be that science studies the objective side of the whole reality of thought and logic the

[1] Such *elements* in a whole must not be confounded with *parts*, i e parts of an aggregate, for that generally implies that such parts can exist without one another Aristotle formulated this kind of unity of elements which are yet distinct in the well-known phrase—ἔστι μὲν ταὐτὸ, τὸ δ' εἶναι αὐτοῖς ἕτερον, i e inseparable in existence, but distinct in essence [Quoted loosely, the nearest expression being ἔστι μὲν οὖν ταὐτόν, τὸ δ' εἶναι ἕτερον, *De Anima*, 424ᵃ 25, cf *E. N* 1130ᵃ 12, al]

subjective side (the content of the individual thought) in abstraction from the objective side. And here we see perhaps some room for the application of such metaphors as *form* and *matter*, for neither element is real in abstraction from the other. These terms however must be used only as convenient abbreviations, not as supposed explanations. It is interesting to notice that they would arise quite naturally from that tendency to identify what we think with thought, a tendency which seemed so innocent and whose consequences we did not anticipate. They are however, strictly speaking, terms proper to an idealistic view only and should therefore be avoided unless we hold such a view. It makes no difference whether they were or were not directly intended to be the result of that view.

§ 29. The distinction thus arrived at between logic and the sciences not only follows from the implications of that ordinary view of the content of thought which we had under consideration, but it is the one which suits any form of idealism.

Moreover ordinary language, which no one thinks of challenging, appears to involve as its consequence some sort of identification of the object with the thought, an identification certainly not suspected by those who use this language, and so we naturally turn to reconsider this language itself

The consequences are really drawn from language by help of the view that what we, in knowing, think of the object is what we apprehend *in* the object and must belong to the object itself This view can hardly be questioned and we have seen the contradictions involved in denying it. We have then to ask whether 'what we think' should be called 'thought' in the ordinary way—i e not as something merely on which the activity of thought is exercised but of the nature of thinking itself, and wholly comprised within that nature. That is the only proper meaning of the metaphor 'content of thought'.

That the ordinary view, though so familiar, involves remarkable consequences, may be seen by an analogy [a] When we grasp an object in our hands, though grasping cannot exist without

[a] Wilson felt the difficulty of the metaphor of 'grasping' Finding a remark on it in a pupil's note-book, he wrote a long note on the question which I do not reproduce. Aristotle used θιγεῖν (to touch), *Metaph* 1051[b] 24. Cf Reid's *Inquiry* (ed Hamilton), 2, § 3 note, and note to § 34 *infra*]

an object to grasp, we not only distinguish the object from the grasping of it, but we never think of calling it a part of the whole fact or activity of grasping. Nor do we represent its being as wholly comprised in that of grasping. Is then 'what we think' to be called 'thought' in the ordinary sense, which means 'content of thought' and is identical with actualized thought? In favour of this it may be said that it seems likely to be right, because it is the natural and universal mode of expression in ordinary untechnical language, ancient and modern. This seems evidence that the distinction is not artificial, as the inclusion of the grasped object in the grasping certainly would seem to be.

Even in the case of grasping it might be said that though the body grasped is not a part of the whole actuality of grasping, yet its resistance to the pressure is inseparable from the grasping and only comes into existence when the object is grasped

But the strongest argument in favour of what appear to be the implications of the ordinary use of language seems to be this. If we say that thought proper (in the case of knowledge) is nothing but the apprehension of the object, i e. the apprehension of 'what is thought', and that 'what is thought' (i.e. the nature of the object) is not of the nature of thought or apprehension itself, this abstraction of what is apprehended from the apprehension of it, of what is thought from the thinking of it, seems to make the act of thinking or apprehension empty and meaningless. This argument is perhaps more convincing in the case of a universal proposition, where we are not so much influenced by the customary opposition between the individual thing perceived and our perception or thought of it. We apprehend that the product of two odd numbers is odd. If now we abstract what we apprehend here, the essence of the act of apprehending seems to be gone. Hence the nature of what we think seems in this instance to belong essentially to the nature of thinking. There is a kind of parallel to this in feeling; there is no feeling apart from the definite quality of what is felt—say heat or cold—the idea of feeling seems altogether empty if we abstract what is felt, the quality of what is felt; and here, at any rate, our ordinary attitude, whether right or not, is to make

the quality a part of the whole reality of feeling, and without any hesitation.

Of these three considerations, the second appears to be of no value, because this property of the object, viz. its resistance, only gets realized in the fact of its being grasped. The corresponding feature in apprehension, if the argument is to be relevant at all, would have to be that the properties of the object known should only come into existence in the subjective act of apprehending them That however would be in plain contradiction not only to the ordinary view, with the language of which we are at present concerned, but to the nature of scientific knowledge. We have, therefore, to turn our attention to the first and third considerations

§ 30. To begin with the first consideration, derived from the natural mode of linguistic expression It will prove in the end that the phrase 'what we think about a thing' is ambiguous. There is a sense in which 'what we think' must be a part of the activity of thinking and entirely within the being of thinking.

Let us see what is characteristic of the case where it is so natural to call 'what we think', thought That seems to come out most clearly in the kind of thinking which is called opinion. Suppose we are of opinion that A is B, and it turns out we are wrong. It would be said, in the natural use of words, that what we thought was untrue · or, again, that what we thought about A was untrue Here 'what we think' cannot be the nature of A, for the nature of A cannot be wrong or untrue. So far then we have a fairly clear distinction to justify the contrast between 'thinking about the thing' and 'thinking the thing', and between 'what we think about the thing' and 'the thing'.

We should say that 'what we thought' was untrue if the opinion was wrong But then, if this is so, there must after all be included in 'what we think' the thinking, because it is only the thinking that can be wrong; and the fact is that what is here termed 'what we thought', and said to be untrue, is a particular act of thinking, in which the thinking is inseparably included. It differs from thinking if thinking stands for a universal: for it differs from thinking in general as being a particular realization of thinking. In the case then of opinion, it is easy to understand how 'what is thought' is included in the activity

of thinking in a way in which what is grasped is not included in the activity of grasping.

The case where thinking means knowledge is obviously the most important, for, as we have already seen, whatever is included under thinking depends entirely upon the notion of knowing. In this case also when we say that 'what we think' is 'thought', or 'what we think about anything' is 'thought', we intend, of course, not merely that the thinking of it is thought, but that 'what we think' is 'thought' in the sense of that which makes the thought a real individual thought as opposed to the empty form of thinking in general. We should also say that this thought (=what we think) is true inasmuch as it is knowledge, and consequently, as before, whether the thinking is knowing or opinion, it follows that it necessarily includes our subjective act.

It makes no difference, then, whether the thinking is knowing or opinion: the whole point is that we do attach these epithets 'true' or 'false' to 'what we think'.

Now, whether we know that A is B or form the opinion that A is B, what is the accurate answer to the question 'What is it we think about A?' The accurate answer is, 'That A is B'. With regard to the expression (observe) we can rightly say 'that A is B is false', or 'that A is B is true'. This shows that the expression 'that A is B' is not equivalent to 'A's being B': for A's being B represents a fact which cannot be true or false, so that when the thinking is knowledge, and therefore thinking A is B is true and is knowing that A is B, the expression 'that A is B' is still not equivalent to 'A's being B', or 'the B-ness of A'. What we think about A is, in fact, properly understood, always 'that A is B'. This, then, seems to be the accurate expression for that upon which so much depends—'what we think about A'.

Our previous difficulty arose from making what we think of A equivalent to the objective B-ness or the objective 'A's being B'. Can we say in any sense that in thinking A is B (whether the thinking is opinion or knowledge) B-ness or A's being B is what we think of A? The answer seems to be that we can and do, and yet that in truth the expression is not accurate but abbreviated and idiomatic. It has indeed, in the

last resort, to be explained as just meaning that we think that A has B-ness or that A is B; and consequently, when accurately expressed, this explanation is precisely the same as the one already given.

So far, in examining the identification of 'what we think' with 'thought', 'thinking' has been used in the widest sense. But our investigation of the various uses of the word thinking has shown the importance of asking in every given case what kind of thinking is meant, when any such question as the one before us is raised about thinking In the case of opinion, we got our answer by considering precisely the kind of thinking meant—viz. opinion. In the case of knowing that A is B, our thinking is the apprehension of A's being B, or of the B-ness in A; and 'what we think' of a thing which we know is what we apprehend *in it* and must be part of its nature[1] If what we think were accounted to be thought and included in thinking, this would have to mean that what we apprehend, the fact of A's being B, or the B-ness of A, is included in the apprehension as a part of the activity or reality of apprehending. Obviously this last statement would be quite against the usage of language: and it is the usage of language that we are examining.

This shows that the use of language when properly understood implies an identification of 'what we think' with 'thought' only when 'what we think' is taken in the general sense in which it includes opinion, and is not the nature of the object thought. Accurately, then, the 'what we think' identified by implication with thought in ordinary language is not a 'what we think' abstracted from the thinking of it, but includes inseparably our subjective act of thinking it

§ 31. We come now to the third consideration, for the preceding has by no means disposed of that.

In knowing the nature of A as B, we are apprehending an object, and '*what* we apprehend' is an object, and the apprehension seems empty and no apprehension at all, if we abstract from it what is apprehended. Take that away and what is left? This naturally inclines us to think of what is apprehended as of the being of the apprehending This time, undoubtedly, what is apprehended is the nature of the thing.

[1] § 27

Nor is this a mere theoretical development, for, as a matter of fact, people do vaguely think of the 'content' of thought or apprehension as being the main part of the reality of the apprehension itself: and persistently, in consequence, distinguish this from the thing. To solve this problem then we shall have to appeal to considerations of a more general kind, which are not confined to the relation of thinking and its object, but apply in general to things which are related.

In popular thinking, at all times, there is a tendency to treat individual existences as independent realities and, though the fact that they enter into relations is recognized clearly enough, to regard their relations as something external to the nature of the things related, not as belonging to their own being. This which is implicit in the ordinary consciousness becomes explicit in the beginning of philosophy, and it is what we find in Aristotle [a] Relations are distinguished from things and are excluded from the being or essence of the individual thing. In many ways Locke in modern times reminds us of the position of Aristotle in relation to his own day. For Locke may be described as a philosopher who makes explicit the tendencies and implications of ordinary popular thinking. It seems fair to say of him that he treats the individual substance as thus remote from relations There is, in fact, a somewhat sharp distinction between substances and relations both in Locke and in Aristotle.

Modern metaphysics [b] has revised this view as it has become clearer about the connexion of this supposed indifferent relation with what is called the essence of the thing, and has come to the conclusion that the severance of the two is artificial But, in so doing, it has tended to advance to the extreme opposite of the view it criticized and more or less consciously to break down the distinction between things related altogether.

It seems quite wrong to exclude from the being of a thing anything which is necessitated by what we have taken to be its being, anything from which that is inseparable For the latter is a necessary element in the complete account of the

[a In earlier lectures 'Plato and Aristotle'

b 'The general metaphysical theory . . overstatement', p 72, refers to Green, e g *Works*, II 170–2 His reaction against this view was fundamental but he did not emphasize it in reference to Green. Cf. Part V, § 564.]

thing's being, though it may be different from that aspect of the thing's being which we first had before us. Suppose A and B are in a relation R. R is nothing without the special nature of A and B, and thus, if we follow the tendency above described, we should say that in the being of R, in its completeness, must be included that of A and B, and similarly B would be included in the being of A This would have to be the case even if R were a temporary relation Suppose two bodies come into collision; the collision is nothing without the bodies *of* which it is the collision, and its special nature as *this* collision depends on the special nature of these bodies On the other hand, R itself similarly belongs to the special nature of A and B, so that the nature of A or B in this way would be made to include that of R

The application of this to the relation of the apprehending and apprehended is obvious We should be obliged to say that the being of the thing was included in the being of the relation, the being of the thing apprehended somehow included in the being of the apprehension. We shall find that the general metaphysical theory which would lead to such a result is an overstatement

If A stands in a relation R to B, even if R be temporary, the being of A is not independent of the being of B That is true and accurate. Again the complete account of the being of A must include the relation to B. That again is true and accurate. But must we, therefore, include the being of B in A, as seems the tendency in some modern metaphysicians, and would the use of 'include' here be accurate?

The key to the answer is the fact that A and B, however closely related, are different and not to be entirely identified with one another. The dependence of the one on the other, however absolute, cannot destroy this difference. If now inclusion is taken in a strict sense, as it ought to be, and the being of B is to be included in that of A, for the same reason we should have to include the being of A in that of B This would result in a contradiction, which would only be avoided if A and B were indistinguishably the same

Again, if we take the 'being of A' in the sense of what A is, then what is part of the being of A must be a part of what

A is. So we say 'heavy' is a part of what lead is, since lead is heavy. Now, if this is a particular quality or kind of thing, X-ness, we must be able to say that A is X or A is an X, where X is an adjective or a common term. If, however, X is a particular like A itself, we must be able to say simply A is X, e g. that flower is the one I bought yesterday. But if A is related to B, we cannot *therefore* say that A is B, or A is β where β is an adjective or common term corresponding to B. It is not accurate, then, to say the being of B is included in that of A, or the being of A in that of B. On the contrary, in so far as we say A is in the relation R to B, and in so far as it is the nature of A to stand in this relation, A's being in the relation to B may be said to be a part of the being of A. But A may have a being other than this relation, a being not including it; e g. if we say A is near to B, this implies that A and B are something, have some nature, which is other than this relation, for instance, that A is a tree and B a house. Moreover, it is this nature, other than the relation and not including it, which is what we mean by A or B, and if we were asked what A and B were, our answer would be a description of just this nature In short, the relation only obtains between terms which are different from one another and as having natures which do not include the relation.

Consider now the being of R, the relation between A and B. This is relevant to our immediate problem, since the apprehending of the object may be said to be a relation between the thinking subject and the object.

Our difficulty was that if we abstract what is apprehended from the apprehension of it, apprehension seems empty and meaningless. We saw, for instance, that if we abstracted a universal proposition apprehended from the apprehension of it, the essence of the apprehending itself seemed gone Thus the nature of what we think or apprehend might seem to belong to the nature of thinking or apprehending. Now, it is true of a relation in general that it is inseparable from the terms related and that it seems empty and meaningless if we abstract these terms from it. Equality is essentially the equality of two things and we cannot leave out the things. But does it follow that we should therefore regard terms related as having their being included in that of the relation?

Let us consider the example of a collision. This is nothing apart from the bodies which come into collision: it is inseparable from them. Abstract the bodies and the collision is gone also. However, the very nature of the collision between two bodies, A and B, necessitates itself that A and B should be different from one another It also necessitates that A should have a being other than being in collision with B, and it is only as having such being that it can enter into the given relation with B. Again, while the being of A is not included in and is not part of the collision, on the other hand (in that wider sense in which the being of A is made to include everything which happens to A) the collision would be part of A's being. But it is no part of that being of A which is identical in all that happens to it, and which would be called what A is 'in itself'.[1] And the latter being, which excludes the given temporary relation, is the being already spoken of as necessary for A's entering into the relation

We have, then, here a case where a relation, though empty and meaningless if we abstract from it the terms related, is so far from necessitating their inclusion in itself that it necessitates the contrary; for it necessitates that these terms must have a being of their own which is not included in the being of the relation.

§ 32. This illustration seems enough to show that the inseparableness of the apprehension from what is apprehended does not warrant the conclusion which it seemed to suggest The truth is, that just as the collision with B is only possible through a being of B other than its coming into collision, and it is with B as having such being that the collision takes place, so also the apprehension of an object is only possible through a being of the object other than its being apprehended, and it is this being, no part itself of the apprehending thought, which is what is apprehended.

Thus, if an object is apprehended, it does not follow that merely because it is apprehended it must be a part of the nature of the apprehension, that is part of the apprehending consciousness If that were so it would be entirely mental or, in general, a state of consciousness. What is apprehended, or the object

[1] §§ 70, 71.

apprehended, may be a state of consciousness, yet even then it would not be a part of the apprehending consciousness; or again it may not be a state of consciousness. Which it is can only be determined by an examination of the nature of the object in question itself and certainly not from the mere consideration that it is apprehended in general, or is an object of thought. Yet it is this consideration which is the sole basis of such idealism as Berkeley's, and, one may ask, is there as yet any system of idealism of which this is not true?

§ 33. We have seen in what sense the habit of making 'what we think' belong to the nature of thought itself may be justified. On the other hand, when 'what we think' means what is apprehended, what is thus thought or apprehended is an object which is not to be reduced to a part of the being of the apprehending thought Yet this is actually done by implication when the identification with thought of 'what we think' (or the so-called content of thought) is applied to the apprehension of the nature of the object. For the only thing that can be found as 'content' of the apprehending thought is the nature of the object apprehended. The mistake however is not noticed because thinking is still supposed to be thinking something *about* the thing and not thinking the thing, whereas, if the activity of consciousness is to be called in this case thinking at all, it must be thinking the thing

But now, in discussing the difficulty about the belonging of the object to the being of the apprehending thought, we have been led to see that conversely, in the wider sense of the being of the object, there belongs to this being the fact of its being apprehended, and therefore the apprehension. As the way in which the object belongs to the being of the apprehension does not reduce the object to terms of the apprehending thought, so also this belonging of the apprehension to the being of the object does not warrant our reducing the being of the apprehension to terms of the object nor make it of the same kind Nevertheless, this latter is just what is implicitly done in the old theory of knowledge of things through ideas—which really still influences people who would unhesitatingly reject it when put to them explicitly—for the idea in question is nothing but a sort of mental replica or reproduction of the object, sometimes called

a copy, and the apprehending of the object is reduced really to having such an idea; that is to say, is reduced to the existence of such an idea in the mind.

[a] Theories of knowledge and reality, in the futile attempt to explain apprehension (i e. to explain the absolute presupposition of any explanation), have been much affected by these two contrary and one-sided tendencies, each of them an overstatement of the interconnexion of the being of the object and the being of the apprehending thought; the tendency to reduce the object apprehended to terms of the apprehension of it, and the tendency to reduce the apprehension to terms of the object. Now neither can be reduced to the other; neither expressed or explained in terms of the other.

[a Cf Part V, §§ 541–52]

PART II

STATEMENT AND ITS RELATION TO THINKING AND APPREHENSION

I

APPREHENSION IN GENERAL

§ 34. We must now endeavour to begin a systematic investigation with some unifying conception, remembering that we could not get such a conception unless the material which it is to unify were, in part at least, already before us We must not expect to determine exhaustively all the departments of our inquiry beforehand, and we must also take into account the beginnings of logic, because logic, like other studies, has developed historically only from the solution of particular problems.

If we hold that the thing is not to be identified at all with thought, we can distinguish logic as a study of thinking from science as a study of things. This, however, may be put in the more general form that science studies the object apprehended, and logic the apprehension,[a] a study which should include the various activities called thinking . science, in fact, being a way of apprehending objects, and logic a reflection upon apprehension in general

Beginning with the idea of logic as a study of thinking, we at first looked naturally for a universal which might embrace all thinking. But the various departments of thinking have not

[a This important term is nowhere defined by Wilson, who appears to use t as equivalent to Aristotle's *νόησις* For long he used 'recognition' to express the immediate cognizance of the object and conviction of its being. The difficulty latent in the word is its concealed metaphor and the fact that since it became an English word it has tended more and more to mean belief (subjective) in what may or may not be real, e g apprehension of death and danger In *N E D* II 5 it is defined as 'the action of laying hold of with the senses' and ib 7 'the action of grasping with the intellect' See also s v in Mr Onions' *A Shakespeare Glossary* Price uses it as a technical term for 'the soul's Power of surveying and examining all things, in order to judge them, that is, a power conversant about universals and actively discerning' (*British Moralists*, Selby Bigge, II, § 593) Price seems to suppose that Plato used *κατάληψις* in this sense, but it belongs to later Greek philosophy, especially the Stoic The Latin word seems used by the Schoolmen as a general term for the receptivity of the senses (cf notes to §§ 44 and 147, p 341) Lotze uses it for a sensitiveness which precedes perception (*Logic*, § 20)]

the kind of unity which this search implies; they have not a unity in the sense of a common universal of which they are the different species. Nevertheless those of them which are not knowledge depend upon knowledge; they exist only through the impulse to know and are understood only through knowledge. Their unity with knowledge or apprehension and their unity also with one another both depend upon their relations to apprehension. We are thus led to the consideration of apprehension in general, both that which is perceptual and that which is not, as the primary subject of investigation, if we start from logic as a study of thinking. We shall arrive at the same result, if we start from the idea of logic as mainly concerned, as its history shows it to have been, with inference

If then we make apprehension in general the starting-point, this includes knowledge and is the key to the activities called thinking. In this general form also we have a distinction which is adequate to characterize the difference between logic and science and is not affected by any theory as to what constitutes the reality of the object, for it is based simply on the distinction of apprehension and that which is apprehended; and it does not oblige us to decide between the conflicting theories of reality of which we have spoken

§ 35 [a] This distinction of logic from science is of great importance. Scientific thinking is essentially different from any kind of philosophical thinking and the common habit of calling logic a science, which results from defining science as methodical study in general, is to be deplored as obscuring one of the most vital distinctions in the field of knowledge

In our ordinary experience and in the sciences, the thinker or observer loses himself in a manner in the particular object he is perceiving or the truth he is proving That is what he is thinking about, and not about himself, and, though knowledge and perception imply both the distinction of the thinker from the object and the active working of that distinction, we must not confuse this with the statement that the thinking subject, in actualizing this distinction, thinks explicitly about himself, and his own activity, as distinct from the object.

The process may be described as one in which the thinking

[a Lotze, *Logic*, § 332]

subject, already realized in some activity of thinking, passes to a further realization of this activity—this is the process from the point of view of apprehension—, or we may describe it as a process in which the already partly apprehended object becomes further apprehended or has some further opinion formed about it. The subjective element in this unanalysed unity of apprehending and apprehended becomes afterwards itself an object of consciousness This is a new kind of thinking, which we may call reflective, as distinguished from scientific thinking and our ordinary thinking about objects, and comes into existence in the conscious attempt to attain knowledge. For here the subject distinguishes his own incomplete state from the completer state which he desires; his attention is directed to himself and his thinking activity, and he is able to 'abstract' himself, as we say, and this thinking activity in general, from the various stages in which it is manifested. This advance leads to the abstraction of thinking as such, as our subjective activity, and later comes the recognition of specific forms which belong to this activity and are, in a sense, independent of any particular object.

It is the discovery of these abstractions which constitutes the beginning of logic. Yet we must not suppose that they are at first made with a consciousness of how they differ from the abstractions which we make in our ordinary experience and thinking. Thus, even when attention comes to be directed to them, it may be found difficult to determine what constitutes their peculiar character. It is understood that they are somehow specially abstract as compared with our more familiar notions, but that is not enough. No process of abstraction, however far it is carried, will get the properly logical notions out of our conceptions of objects as we have them in experience and in the sciences. For, if carried to its extreme point, such abstraction would end, say, in the mere abstract conception of being in general, but would not take us into the region of those conceptions which properly belong to logic. This itself is decisive evidence of the difference between the sciences and logic. The reason is, simply, that such abstraction proceeds entirely from conceptions of the object known and cannot therefore bring us to conceptions which arise from a consideration not of the object, but of the knowing of it.

§ 36. Now in the activity by which the subjective side naturally first gets recognized—i.e. becomes an object of the reflective consciousness—one kind of apprehension of objects, viz. experience, does not so naturally suggest the reflection on our own subjective activity. The explanation is that the subject here seems mainly passive; we seem to be acted on by the object; something comes to us without our making or seeking. We do not then naturally inquire at first what are the forms or laws of experiencing, much less ask the question whether there are rules for doing this properly, because it seems something out of our power. But there are processes of apprehension which depend upon our own desire for knowledge and are not experiencing (in the normal sense of the word), processes which we originate and which we conduct, as distinct from the action of the object upon us. Here it is that the recognition of our own activity naturally begins, and it is to such processes, including the inquiring activity associated with them, that the word thinking as meaning an activity of our own is in ordinary usage restricted. The recognition of such processes brings with it the question. 'Can we find general forms which belong to it?' together with the further question 'Can we lay down rules for its safe guidance?' In this way originates the study of inference.

It is thus that logic has, as a matter of fact, been concerned with the forms and rules of thinking in this restricted sense and not with those of every kind of apprehension or of acquiring knowledge, and we find that the study of inference has been from the first the main, if not the only, problem of logic [a]

§ 37. If we look to the actual starting-point of the part preliminary to inference in the Aristotelian logic and the ancient logic founded upon it, we do not find it to be some consideration of the general character of apprehension. The beginning is made from an examination of the verbal statement or enunciation [1] of a fact; and, since the distinctions arrived at are those upon which the theory of syllogistic inference is based, we may suppose

[1] *ἀπόφανσις*, in Aristotle e g *De Int* 17^{a} 25

[a] The last paragraph is exaggeratedly put 'rules' in this sense Logic is called an Organon, *see* § 232]

that the kind of questions to be asked about verbal statement and the nature of its analysis were suggested by the interest in discovering the general forms of inference. Inference, in its verbal expression, being made up of statements, the search for a general form of inference leads to a determination of the general form of statement, with its division into species. And the elements which are distinguished within the form are of a kind suggested by the contemplation of a syllogistic argument.[1]

Now the distinction within the verbal form of statement arrived at with such an interest in mind—a distinction subservient to the analysis of the syllogism—is one which belongs to the being of the object and not to our apprehension of it, and so is not logical That a distinction which belongs to things should be discovered through the medium of the statement is not surprising, for the statement describes the nature of the thing, and to the objective distinction in question corresponds a verbal distinction within the general form of the statement. It is quite right that the distinction arrived at should be, not a logical one, but within the nature of the object, because it is such a distinction which is necessary for the purposes of syllogistic inference, as will appear on examination Yet, though not a logical but a metaphysical conception, it has a true place in logic because it is the result of a logical inquiry and is introduced as necessary to the solution of a logical problem

But, though it is an objective distinction which is made and used, the ordinary logic does not realize that it is so and actually confuses it in terminology with a truly logical distinction, that of subject and predicate Yet the two are so different that while the distinction in question is necessary to syllogistic theory, the distinction of subject and predicate is absolutely useless to that theory. Paradoxically enough the terminology of subject and predicate is always used in the presentation of the syllogistic theory, without however producing confusion The reason is that the erroneous terms are never used in that theory in their proper sense, but are confined to the objective distinction, and what is really meant is made clear enough for practical working by the symbolism adopted. Not uncommonly those who apply a principle rightly in particular cases are unable to give a correct

[1] This point is resumed in §§ 61–2

account of its general character. The confusion in this case comes from a mistake about the meaning of verbal forms in relation to 'predication', and the exact nature of the objective distinction of which we have been speaking will have to be reserved for a special investigation, where we shall show how the confusion makes itself felt in a noteworthy utterance of Aristotle's upon predication [1]

It is indeed possible that the idea of a general form of statement and of its analysis into such elements may have been growing up already through the interest taken by Greek thinkers in the metaphysical questions of the unity of a thing in its attributes and the unity of the universal in its particulars. To the former corresponds in statement, as Plato says in the *Sophist*, the calling of one thing by many names; to the latter corresponds the calling of many things by the same name. Nevertheless the analysis of the syllogism probably brought with it the precise formulation and actual symbolism, for we do not find this before the work of Aristotle, and it is connected with the characteristics of the syllogism in a strikingly direct manner.

How far the analysis arrived at in logic was promoted by the contemporary progress of grammar we cannot say, for we know so little about the latter Grammar does presuppose that the abstraction of a general form of statement—the sentence—has been arrived at, and that would facilitate and perhaps influence such a treatment of the proposition as we find in the logic of Aristotle On the other hand, the analysis which he reached is not a grammatical one; it does not coincide with the distinction grammar proper makes within the sentence, either of clauses (for these are altogether ignored) or of parts of speech. The analysis however, which the syllogism would naturally suggest, lies to hand, the very name indeed under which statement is investigated in this logic is not a grammatical one, but derived from argument in debate For proposition [2] meant

[1] § 72

[2] πρότασις [a] e g *An Pr* 24[a] 16

[a] Proposition, πρότασις The origin of the word in Aristotle's logic is not certain Trendelenburg thought it was derived from grammar and intended to express 'the conditioning'. Wilson follows Ammonius, ⟨λόγους⟩ ὡς προτεινομένους ὑπὸ τῶν συλλογίσασθαί τι βουλομένων τοῖς κοινωνοῖς τῶν λόγων προτάσεις ὑπὸ τῶν παλαιῶν ὀνομαζομένους (*in De Int* 2[6], cf 4[14] (Busse)]

originally a premiss put forward in discussion, to be accepted and argued from, or to be questioned and argued against.

§ 38. Logic, in some recent books, has followed the ancient tradition in beginning with what is in fact the statement and its analysis This is true also of the more advanced and philosophic modern logic, though it professes to discuss a mental act called judgement and not the verbal expression of that act [a] Thus, in this more advanced modern logic, we find the term judgement substituted for the proposition and the enunciation of the old logic This no doubt arose because the older terminology seemed to the more philosophic point of view inadequate to logic regarded as the study of thinking The proposition was so named originally on account of its relation to debate, and enunciation too refers to the verbal expression As it was held that the intention of logic was primarily to examine thinking, and verbal expression only so far as subsidiary to this object, the word judgement seemed more accurate and was accordingly substituted for the term proposition This, however, was done without a full appreciation of the consequences and the result has been a certain amount of confusion There is a further confusion in the distinction, usual in this advanced logic, between a theory of inference and a theory of judgement, and about the true nature of this second inquiry and its relation to inference. How then does the distinction between these two inquiries naturally arise and what is the confusion that results from false abstraction?

§ 39 The familiar conception of a theory of judgement as distinguished from a theory of inference seems to originate thus The process of inference is seen to presuppose knowledge already gained or opinions already formed The process itself is conceived, in effect, as the apprehending of what these previous apprehensions or opinions necessitate in the way of other knowledge or opinion Hence it becomes evident that there must be apprehensions not got by inference or reasoning This appears in the familiar statement that there must be undemonstrated premisses or there would be a never-ending process [1] [b]

[1] § 329

[a] Referring to Bosanquet's *Logic* and F H Bradley's *The Principles of Logic* (1883)

[b] Inference used to be said to begin '*ex praecognitis et praeconcessis*' The view is in Aristotle, *An Po* 72[a] 7 and [b] 18, *Metaph* 1006[a] 8]

Certain apprehensions, then, are recognized as not being inferences, and also as being material of inference. These are called propositions or judgements (not that these terms are confined to them alone), the name 'judgement' being preferred to proposition in modern logic, because the word 'proposition' is associated with the verbal statement rather than with the mental activity. The study of such apprehensions would be necessary to the study of inference, as it is here conceived, since they are its material, but distinct from the study of inference since they are not inferences.

Thus, if the names 'proposition' and 'judgement' were confined to apprehensions which were not inferences and if the theory of the proposition or judgement meant the study of them as such, the division into the theory of judgement and the theory of inference would be justifiable and the nomenclature so far correct But the study is not so conceived nor is the terminology thus restricted, for the designation 'judgement' is not confined to what is not inferred, but includes what is inferred, whether knowledge or opinion

§ 40. This seems to come about as follows The knowledge we get by inference in the sciences is stated in a verbal form which signifies the nature of the thing known and that only, not the nature of our apprehension of it, and the statement of the fact, omitting, as it often does, the grounds of it discovered in the inference, suppresses all traces of the existence of the process. For instance, 'the square on the hypotenuse of a right-angled triangle is equal to the sum of the squares on the other two sides' is a description of the objective fact, without any reference to our subjective state Such a statement preceded by the word 'therefore' is the last statement in the verbal expression of an inference But without this word, which connects it with the process, it is given as the so-called conclusion of the inference The form of the conclusion, not containing the grounds on which we based it, promotes the habit of representing the mental activity which corresponds to it (the apprehension of the fact) as a result distinct from the reasoning process by which it is got, and the fallacy of regarding it as something in itself apart from the process and possessed somehow alone without the process; whereas the possession of it is

just the inferring process itself The mental activity corresponding to it, the having or possessing it, which 'having' can only be the apprehension of the fact expressed by the statement, or the belief in it, thus virtually becomes a result of the inferring process and so something different from inferring or reasoning.

Like the apprehensions which are not inferences, it is called judgement. Its verbal form is taken to be the statement of a judgement as distinguished from the statement of an inference that is to say, the statement of something judged as opposed to the statement of something inferred. This carries with it inevitably the distinction of judging from inferring and thus the fiction of a kind of mental activity called judgement or judging, as something distinct from inference, comes into existence. The truth however is that if we allow 'judgement' the meaning necessary for the view under consideration, viz the having any knowledge, belief, or opinion, the judgement called the conclusion is not anything apart from the process of inference by which it is attained, and the mental activity of *judging* this judgement—the 'having' of it spoken of above—is precisely the process called 'attaining' it, viz the inferring of it, and inferring is merely a particular way of judging.

But more than this, if we take judging in its most correct and natural sense, that is as decision on evidence after deliberation, then inferring is just one of those forms of apprehending to which the words judging and judgement most properly apply.[1]

§ 41. The familiar distinction then of judgement from inference involves a confusion of thought. Knowledge, opinion and belief are regarded as forms of the same sort of mental activity, termed *judgement*, and this activity, called judgement, is made the subject of a separate inquiry just because it is regarded as

[1] The active working of the false distinction between a judgement in general and the process by which it is attained is seen in the traditional doctrine of reduction (of the 3 inferior figures to the First) This reduction is erroneous, though apparently quite unchallenged [a], and it depends on the fallacy exposed above Cf § 241

[[a] The statement is too general, cf (e g) 'The first three figures are the ectypes of three real and essentially different operations of thought', Schopenhauer, *The World as Will and Idea*, Bk I, ch x 'To some people this (i e reduction to the 1st Figure) has seemed superfluous,' Lotze, *Logic*, § 91]

something different from inference. This fictitious severance of judgement from inference results from a false abstraction. The conclusion of an inference is really the verbal statement of a fact, the existence of which is inferred. This statement, abstracted from the inferring process, is treated as if it could be conceived without the inferring activity. The supposed activity of 'having' or apprehending is called judging or judgement and the statement itself is called a judgement, or more accurately the expression of a judgement.

This activity, then, called judgement, as distinguished from inference, is a fiction, there is no such thing Judgement in this fictitious sense, besides including non-inferred knowledge and knowledge said to be the result of inference, includes also opinion and belief, for the simple reason that what is known, perceived, supposed, or believed may be expressed in an identical verbal form. The man who knows that A is B, whether as perceiving this or not, whether as inferring it or not, and the man who holds the opinion or belief that A is B, may equally use the form of statement that A is B, and under ordinary circumstances do so use it.

Now, if this common form were an expression of the mental attitude of the person using it, it would be reasonable to expect to find a common and essential element in the mental attitude corresponding to the verbal form But the form merely states the nature of what we know to be, or think to be, existent, with complete abstraction of the fact that it is for us matter of knowledge, conjecture, or belief. So far from being an expression of our mental attitude, it says nothing about it whatever. *A is B* means that a certain object has a certain nature or quality, it doesn't matter whether the statement is true or not, that is what it means

§ 42. The traditional division of logic, therefore, into the theory of judgement and the theory of inference rests upon an erroneous principle Strictly speaking, the thing called judgement, which should be the subject of what is called the theory of judgement, is fictitious but the confusion is concealed by the fact that the verbal expression common to matter of knowledge, both inferred and not inferred, and matter of opinion or belief, and mistakenly supposed to be the expression of a mental

activity called judging, does duty for this activity in this part of logic and forms the real object of study. Indeed, the logic which in modern phrase is to be a logic of judgement is, quite unconsciously, a logic of statement.

If this is so, what should we expect? We should expect the inquiry to be directed sometimes to what the verbal form signifies and sometimes to the verbal form itself. If the inquiry is into what the given verbal form signifies, since that is the nature of the object only, with no reference to our thought about it, we should expect the result to be abstractions which belong to the objective reality and not to the apprehension of it, nor to our thought about it in general; objective forms, that is, not forms of the subjective.

And this is what has actually happened. We do find in this part of logic abstractions which are of what belongs to the nature of the object (objective forms of the kind called metaphysical, not true logical forms at all) and, further, metaphysical forms may be confused with logical, as we shall see in the case of the familiar distinction of subject and predicate, where a logical and a metaphysical distinction are unconsciously combined in the same designation. No wonder that in some modern philosophies logic is indistinguishable from metaphysic.

On the other hand, if the inquiry is really directed to the verbal form, we should expect to find abstractions which belong to grammar and to linguistic form in general, associated with the logical and metaphysical abstractions. And this, again, has actually happened. Many of the inquiries in medieval logic are of this kind. In modern logic an instance of it is the theory of the connotation and denotation of terms—which, indeed, has a medieval source[1] This instance is interesting because the subject has proved so confused and puzzling. One must venture to think the secret of the confusion to be that the distinctions attempted concern the grammatical functions of certain word forms, a fact which has not been realized.[2] Another instance is the theory that all universal propositions are hypothetical, a fallacy which has arisen because the logicians who hold the view do not realize that they have before them the question of

[1] §§ 206–7. [2] Part II, ch. 18.

the meaning of certain forms of speech, a purely linguistic question.[1]

In general, when the logical, grammatical and metaphysical notions are not confused with one another, there is a tendency to pass from one to the other without a clear consciousness of the transition and to associate them as if they were of the same kind.

But though the general character of this part of logic may have been misconceived, that need not prevent the presence of true logical inquiries in the traditional theory of judgement and, indeed, of grammatical and metaphysical inquiries which belong to the subject because they subserve the logical. If there are such logical inquiries and such justifiable metaphysical inquiries in this traditional part of logic (and there seem to be), we have to ask what the rationale of their grouping as a special part of logic is. If they differ, and they do seem to differ, from what belongs to the theory of inference, how should the part of logic to which they belong be characterized? From the point of view of the wrong distinction of inference from something called judgement, the difference between the two parts of logic would have to be characterized thus:—the theory of inference studies the subjective side of thought in the reasoning process by which we attain a thought consisting in knowledge or opinion; the theory of judgement studies the subjective side of thought in the form of knowledge or opinion, considered in itself and apart from any process by which it may be attained.

After what has been said, it will be evident that the formula betrays its own incoherence.[a] The subjective side in question, when the thought attained is knowledge, is the apprehension *of* the fact and, in the case of what would be called the *judgement* attained by inference, the apprehension is the inferential process itself. Thus, according to the above formula, we should, in the theory of judgement, be studying (in the case of a judgement which was the conclusion of an inference) the apprehension of something, considered entirely apart from its apprehension.

[1] §§ 98, 103, and 312 [Ueberweg, *Logic*[8], § 94]

[a] This, as so often in Wilson, is self-polemic. He states his own old attempt to solve the problem and condemns it, as he would have said, uncompromisingly]

And, in general, we have found the whole basis of the view which would result in such a formula untenable.

§ 43. What then have we to substitute? For we shall not necessarily reject the whole of an inquiry because it has been conducted under a misconception. We have seen that the idea of logic as a study of thinking in its various kinds led to the consideration of apprehension in general as the primary subject of investigation in logic Starting now from the form of apprehension which is reasoning, that is from our interest in the subjective side of thought as it appears in reasoning, we observe that inference or reasoning depends upon apprehensions which are not inferring. We are then naturally led to the idea of some study of apprehension in general as apprehension, whether inferential or not. This would be a preliminary to the study of inference and so far accord with a feature of a traditional part of general logic, namely that part which, though sometimes entitled the theory of conception, is nowadays usually embraced under the title, the theory of judgement. Apprehension being properly restricted to knowledge and opinion being formed in the effort to get knowledge, we might further inquire into what is common to the attainment of knowledge and the formation of opinion, more especially as what would be called the statement of an opinion and the statement of knowledge are so often (indeed commonly) the same in form.

Such an investigation, again, we should expect to lead naturally to an examination of the *verbal* form of statement, not merely because of this formal sameness in the verbal expression of opinion and knowledge, but in order to see what light the form of expression might throw upon problems about the mental state. But then we should clearly recognize that it is the verbal form which we are examining and how such examination is relevant to our purpose. This, again, would correspond to a feature of the theory of judgement, for example the classification of the various forms of propositions, though the inquiry would be conducted in a different way and with a better chance of avoiding confusions.

Again, metaphysical conceptions such as substance and attribute might have to be recognized and considered in so far as they, in turn, may assist in the understanding of subjects con-

nected with apprehension or thinking in general. But here, again, we should avoid confusion by recognizing that they are of what belongs to the object and not to the apprehension of it and so should not confuse them with *logical* forms. In this way we might expect to include those parts of the traditional theory of judgement which can be vindicated as having a place in logic and to understand their relation to one another and to the general scope of the inquiry. This part of logic then we may describe as concerned with statement and its relation to thinking and apprehension.

II

THE USE OF THE TERM 'JUDGEMENT' IN MODERN LOGIC

§ 44. We have next to consider certain difficulties which result from assuming with the advanced modern logic that there corresponds to the simple statements, whose common characteristic is that they claim to be true, a common subjective activity called 'judgement',[a] on the ground of which the statements themselves may be called judgements. Difficulties arise at once from the natural meaning of the words 'judge' and 'judgement', and from the ordinary view of thinking Judgement is a word taken from ordinary usage and ought to retain what is essential in its meaning there. Certainly it is adopted as if this were so, for no proviso is made. A judgement is a decision.[b] To judge is to decide. It implies previous indecision; a previous

[[a] Cf 'every act of consciousness is a judgement and therefore a belief in the presence of its object' Mansel, *Prolegomena Logica*[2], p 320. Since Mansel, the notion has been very common in England.

[b] Cf 'The last opinion in search of the truth of past and future is called the "judgement", or "resolute" and "final sentence" of him that "discourseth"', Hobbes, *Leviathan*, ch 7 Among the Schoolmen, the usage of Ockham is very close to that of Wilson, 'Inter actus intellectus sunt duo actus, quorum unus est apprehensivus . , alius actus potest dici iudicativus, quo intellectus non tantum apprehendit obiectum, sed etiam illi assentit vel dissentit nulli assentimus per intellectum, nisi quod verum existimamus, nec alicui dissentimus, nisi falsum reputamus,' Ockham, *Sent Prolog.* qu 1. O (quoted in Prantl, *Geschichte*, &c, III, p 333, note 753) 'Sed quando iudicat rem ita se habere, sicut est forma quam de re apprehendit, tunc primo cognoscit et dicit verum,' St Thomas Aq *Summa Th* 1 qu 16, a 2. Judgement is usually held to involve also comparison or 'discrimination', e g "they that observe their difference and dissimilitudes, which is called 'distinguishing' and 'discerning' and 'judging' between thing and thing . are said to have a 'good judgement'", Hobbes, *Leviathan*, ch 8 Cf infra § 108 Certainly in ordinary usage the word includes opinion, e g 'not conceal their alteration of judgement', i e. as the context shows 'an *opinion* formed of the truth or falsehood of a doctrine', Walton, *Life of R Sanderson*, pp. h 3 and h 2, and 'The last *opinion* in search of the truth of past and future is called the "judgement"' (Hobbes, quoted above)]

thinking process, in which we are doubting. Those verbal statements, therefore, which result from a state of mind not preceded by such doubt, statements which are not decisions, are not judgements, though they may have the same verbal form as judgements.

But now many of our so-called judgements in perception are of this kind. If I see black letters on white, I can say that the letters are black and the paper white, but these statements do not, in their ordinary use, represent results consciously arrived at after a period of indecision. Ordinarily I apprehend, it would be said, the white and black directly, without any previous questioning or doubting. These are, in the true sense, apprehensions, although not the kind of apprehension which is judgement, in the strict use of that word. Further, there are in logic and metaphysics certain artificial statements, called judgements, which yet not only seem without title to the name, but do not even in ordinary life get expression in the verbal form of statement supposed to be judgement. According to the doctrine *omnis determinatio est negatio*, the perception of white, for example, would be said to involve necessarily its distinction from other colours, the apprehension of this distinction, and therefore negative judgements expressing the distinction. Now these would have to be of the form, 'white is not black', 'white is not red', &c. Yet no one ever, in natural thinking or speaking, either makes or expresses these so-called judgements. I will return to this later in the discussion of negation.[1]

Again, there are statements of opinions, and these in this logic rank equally as judgements. But now, if I consciously form the opinion merely that all A is B, I am not sure that all A is B; nor do I decide that A is B. The verbal formula then, all A is B, if regarded as the expression of my opinion, is not the expression of what I decide. That statement therefore is not the expression of a decision and therefore not the expression of a judgement. There is here a thinking process which contains decisions, the decision being not that A is B, but that there is such and such evidence for it; and in opinion, the decision about the evidence is what alone is entitled to be called a judgement.

[1] Part II, ch. 12.

So far then we find,[a] putting aside that fictitious notion of judgement of which we have spoken, that in its normal use judgement does not include every mental attitude which corresponds to the statement A is B; that perceptions in general are distinguished from judgements; and that (excluding certain apprehensions and perceptions which do not seem, in any natural expression, to get the form of statement) perceptions which do find expression in verbal statement, and opinions, as well as true judgements, whether they have any common element in their nature or not, may still have corresponding to them the same form of verbal expression, i.e the statement.

§ 45. Now logic, when it professed to deal with propositions in general, had no difficulty in including these varieties of statement No distinction was made and logicians did not even think of making one. Modern logic is in a different position; for, if it substitutes judgement as an improvement upon proposition, it should realize the consequences of choosing such a significant term and should exclude such statements as these, or at least explain how they can possibly be regarded as judgements. But in general, owing to the misleading identity of the verbal form, these statements are not excluded and no reason is given for retaining them.

Consider next, from the standpoint of the ordinary view of thinking, the mental attitude which corresponds to these various kinds of statement, which are thus identical in form. If logic starts, as it usually or often does, from a definition which commits it to the view that it is a study of thinking and if it really confines itself to thinking, then it might be said that there would be no difficulty about statements representing perceptions, for these are not the results of thinking proper and so would not enter into the field.

If, again, logic starts with judgement proper, to be consistent it would have to exclude perception and statements of perception; that is experience and the statement of experience; simply because perceiving is not, in the ordinary view, either thinking or judging. But the logic in question does not exclude

[a The original MS has a marginal note: 'add to this from previous version'. I could not trace this, but my redraft expresses Wilson's mature views, I believe]

them and, if we are not to exclude them, what then is the justification for retaining a discussion of them in this part of logic? The true explanation would appear to be that logic is obliged to study them if for no other reason than because they have the same verbal form as true judgements. For certain decisions again, after the process of thinking, perception is required; for instance, I may see that the question I am thinking about partly depends upon an experience; if I am, say, comparing the length of two objects, I may have recourse to putting the two things side by side. Now the apprehension of one extended beyond the other would be a perception, never a thinking process. Finally, even if we are clear that many perceptions are not, as such, decisions after a state of doubt, the question will arise whether thinking is to be excluded after all from perception, and indeed some philosophers have made a great point of asserting that it does enter into perception. Clearly such questions can only be decided by getting some definite agreement as to what we mean by thinking; in fact by some such discussion as that conducted in an earlier chapter.[1]

§ 46. On the other hand, while statements of experience would thus be excluded on the ordinary view of thinking, opinion would certainly be held to be the result of a thinking process. Thus, if logic is confined to thinking, it might be asked whether opinion would be excluded by making judgement our starting-point.

If it be said that [a] judgement is not merely a starting-point, but covers everything examined in this part of logic, if judgements moreover are to be decisions, opinion would be excluded for the reasons already given.

But we may modify this account of the starting-point in judgement and understand it to mean that we start from judgement in its true and proper sense, making it not the general form of the mental activities called thinking but the key to the understanding of them. Then opinion would be naturally included in this part of logic, since it is a process which we understand through judgement; both because it is in the effort

[1] See Part I, ch 2

[a] Cf. § 42. Self-polemic against a discarded solution in earlier drafts.]

to form a judgement proper, a decision on evidence, that we form an opinion; and because the estimate of evidence which is necessary in the formation of opinion involves judgement proper.

So far, then, we should be justified in including opinion under the theory of judgement; but still there will be something else besides judgement to be recognized in the formation of opinion, that is to say knowledge, as manifested in such activities as occur in ordinary perception; activities, in other words, which are not properly speaking *decisions*. We may suppose that some difficulties may be got over by a better formulation in language. The man who forms an opinion is not entitled to say that all A is B, much less is that an expression of his attitude of mind. It is not adequate to the thought it may be supposed to represent. A more adequate expression would be 'A is perhaps B', or 'A is probably B', assigning at the same time the reason; the reason being a statement of evidence Now, if we assume that the word 'probably' simply represents an objective characteristic of the evidence, namely, that there is more evidence of a certain sort in favour of A's being B than against it, then 'A is probably B' would be the statement of a judgement in the true sense of the word But in this way we should have gone too far, for we should have failed to provide in our statement for opinion as opinion at all, because we should be merely expressing that decision which we have shown cannot be opinion. We must therefore either say that the expression 'A is probably B' does not represent the opinion as opinion, or else we must interpret the word 'probably' in a different manner. The latter seems to be the most reasonable course The word 'probably' does imply the attitude of opinion[a] In fact it does add something to that estimate of the evidence which in the process of forming an opinion can be called judgement. It refers to a unique mental phenomenon, a certain effect of the evidence on our consciousness which has no parallel in the knowing activity. The expression 'A is probably B' then remains the

[a] Cf 'The entertainment the mind gives this sort of propositions is called belief, assent, or opinion' Locke, *Essay* IV 15, § 3 Wilson was reading Locke again carefully when he wrote all these sections about apprehensions which are not true judgements]

expression of an opinion and not of a judgement, is indeed in the strict sense not a judgement. We cannot therefore, by a mere change of phrase, eliminate the difficulty with which we started, so as to make the only subject of logic, in this part of it, judgement in a true and accurate sense.

§ 47. Judgement then being different both from perception and opinion, the question now arises whether there is any general form of which these are species. Could we, for example, say that this form is apprehension in general? Apprehension seems to be a term proper only to those judgements and experiences which are knowledge, for apprehension must be true because it is apprehension of the nature of the object and this is just what truth is. Opinion, accordingly, cannot be apprehension, for even if the opinion that A is B should be true, that would not constitute it apprehension for the person forming the opinion.

Inasmuch then as some judgements at least are knowledge, the answer to our present question must follow from the answer to be given to the question whether knowledge and opinion are species of one common form, and to the further question whether perception is, as some suppose, erroneously distinguished from thinking. Two things at least seem clear from the foregoing discussion one, that judgement is not the name of a common element in the various mental attitudes which find their verbal correspondent in the form of statement, A is B; the other, that, in accordance with our previous discussion of the supposed common element in thinking, apprehension, a term wider than true judgement, is that through which we have to understand the activities of thinking and is also that which gives them their unity Nevertheless their unity (even if we exclude from consideration the interrogative or wondering attitude) is not to be found in a common universal of which they are the different species.

III

OPINION, CONVICTION, BELIEF AND COGNATE STATES

§ 48. We pass now to some important considerations about activities which are naturally described as thinking, at first sight, and are distinguished from knowledge, whether perceptual or not. These activities are such as opinion (which has already been compared with judgement), conviction, belief and their congeners. We shall be led also to investigate the possibility of false judgement, to consider certain erroneous states of mind and even a certain form of consciousness which actually simulates opinion and belief, although it is, properly speaking, neither.

This investigation illustrates the necessity which logic is under of examining, in its own interests, activities and ideas which may turn out to belong themselves properly to another study or science. We may say in advance that we shall be obliged to recognize in consciousness something which is not clear thinking and which eludes us just because we tend to try to express its character in terms which belong to that thinking. This caution must be kept in mind in all our succeeding investigations.

In what has gone before, we have criticized a view which is obscurely bound up with the familiar distinction of judgement from inference, the view, namely, that knowledge, opinion, belief, as well as perception and experience, are forms of one and the same sort of mental activity, called judgement. This supposed common activity has been investigated with special reference to its name 'judgement', but the difficulty does not lie merely in this designation, it lies in the assumption that there is one and the same kind of activity at all, however named, manifested in each of these mental attitudes; something more specific than, say, mere activity of consciousness in some relation

to the object,[1]—something so definite that a special verbal form, the proposition, corresponds to it.

Now we have suggested that this view has not arisen in the only way in which it should properly arise, from an analysis of these mental states or activities themselves;—indeed no analysis could discover it,—but from the existence of the common verbal form, the statement, which is indifferently applicable to all of them.

Yet the form of statement in question is so far from being an expression of the mental attitude of the person using it that it says absolutely nothing about our condition in uttering it; whether that condition be one of knowledge, of strong belief, or of weak opinion. It is therefore a fallacy to assume from this identity in the form of statement about the object an identity in our mental attitude towards the object. We must examine these attitudes or activities themselves, if we are to find a common element in them

§ 49 Consider knowledge and opinion. We easily see that opinion involves knowledge; but we also see that the opinion itself must not be confounded with that knowledge. It is characteristic of the cases where we form an opinion that we notice a certain quality in the evidence, in virtue of which we say the evidence known to us is stronger for one alternative than for the other. We know, that is, that certain facts are in favour of A's being B, but either that they do not prove it or that there are facts against, though not decisively against, A's being B But this estimate is not the opinion We are affected by it so as to form the opinion, yet the opinion is neither the knowing which constitutes the estimate nor any kind of knowledge. It is a peculiar thing—the result of the estimate—and we call it by a peculiar name, opinion. For it, taken in its strict and proper sense, we can use no term that belongs to knowing. For the opinion that A is B is founded on evidence we know to be insufficient, whereas it is of the very nature of knowledge not to make its statements at all on grounds recog-

[1] We cannot make this vague idea more specific by defining the relation to the object as, for example, 'being concerned with the apprehension of the object' For the apprehension of the object is knowledge, thus we should be merely defining knowledge as an activity concerned with knowledge.

nized to be insufficient, nor to come to any decision except that the grounds are insufficient; for it is here that in the knowing activity we stop. In knowing, we can have nothing to do with the so-called 'greater strength' of the evidence on which the opinion is grounded; simply because we know that this 'greater strength' of evidence of A's being B is compatible with A's not being B after all. Beyond then the bare abstraction of conscious activity, there is no general character or quality of which the essential natures of both knowledge and opinion are differentiations, or of which we could say in ordinary language that each was a kind. One need hardly add that there is no verbal form corresponding to any such fiction as a mental activity manifested in a common mental attitude to the object about which we know or about which we have an opinion. Moreover it is vain to seek such a common quality in belief, on the ground that the man who knows that A is B and the man who has that opinion both believe that A *is* B. Belief is not knowledge and the man who knows does not believe at all what he knows; he knows it. We might as well say at once that knowledge is a kind of opinion as that it is a kind of belief.

§ 50. We have spoken of opinion such as is consciously formed and recognized as an opinion and not as knowledge by the person who forms it; and, however determined we may be in such a case to act as if the opinion were knowledge, our expression of it shows that we do not confound it with knowledge, and hence follows what has been said about the distinction of judgement which is decision from opinion. There is here a certain simulation of an act of judging which, however, ought not to mislead us For, though I am not sure that A is B (and therefore, though inclined to it as probable, I have not *decided*), I may decide to *act* as if A were B I may have to make up my mind between two alternative courses of action and, knowing neither, I may choose all A is B as the more probable and the one therefore that I shall act upon (although probability is not the sole ground of such decision). There is then a mental decision, which may be said to be in favour of all A is B, a practical decision, getting it is true greater definiteness by the fact that we act upon it, but not the judgement (or decision) *that* A *is* B.

However, we find in ordinary language another term, belief, akin to opinion, yet distinguished from it, so that sometimes a man would actually prefer the term belief to opinion. When this is done it would be felt that the uncertainty which seems to be associated with opinion has caused us to avoid that word. This again implies some (say) 'superior' certainty about belief. This fact we cannot afford to neglect. Such distinctions in language are never unimportant In the first place we observe that the tendency would be to use the term 'superior' certainty and to avoid 'absolute' certainty; and then we at once reflect that in certainty there are no degrees and that certainty therefore is not the right word. Yet we feel that there *is* something, when we compare belief and opinion, which does somehow vary in degree and we naturally ask what this is. In the case of a given belief, for example, that A is B, as long as we hesitate to call it knowledge, or at least betray ourselves by using the word belief and avoiding the word knowledge, we cannot really have decided that A is B unless, on reflection, we can say we *know* A is B. That is why judgement does not seem a proper designation for this attitude of ours. There is a clear decision in our resolution to "act on our belief", i.e. to behave as if A were B, taking some practical resolution in consequence. But this decision in the case of belief is not the whole matter, for such a decision may also be made in the case of an opinion. Again, in a practical decision there are no degrees. We decide to act on a belief or we do not. Nevertheless, comparing the practical decisions with one another, we observe a difference. In the case of a given opinion, we should risk treating it as if true for certain purposes; for others we should not, because the consequences would be too serious for us if we were wrong. In general, on a belief we risk more than on an opinion. Thus, though there are no degrees in decision, we observe a difference of degree in the importance of the decisions; but what is behind that? Now it may truly be said that the more evidence there is in favour of A's being B, the more we incline to risk on it. But this is not yet the complete account. In a given case (not in all cases) of belief, we should have a real judgement, a true intellectual decision, that there was so much evidence for A's being B; also, a real decision, but a practical one, to behave

as if it were true in a certain practical issue; yet we refrain from certain other practical decisions which we should certainly make if we *knew* that A was B.

Now, this obviously cannot be explained by saying that the evidence is enough to justify us in the one case in taking A is B as true, but not in another case and in other circumstances. The evidence is the same both times and cannot change its strength in consequence of the difference between the practical issues. As evidence, if it justifies taking the thing to be true once, it justifies it always. We cannot really account for the facts unless we take note of that subjective feeling, already indicated by the word inclination, in what has been said of opinion. Corresponding to these different degrees of practical importance in our decisions in the case of different opinions and beliefs, there is a varying degree of feeling of confidence. This is *sui generis*; and we have really been getting at the recognition of its true positive nature by distinguishing it from that with which it might be confounded. Such confidence is not an attitude that we take towards knowledge. It is a matter of knowledge that the angles at the base of an isosceles triangle are equal. We constantly apply it in practice, yet we should never say that one who did so acted with 'great confidence in the truth' of this proposition To a high degree of such confidence, where it naturally exists, is attached the word belief, and language here, as not infrequently, is true to distinctions which have value in our consciousness. It is not opinion, it is not knowledge, it is not properly even judgement.

To sum up then, we have a true judgement or intellectual decision that there is evidence in favour of A being B. We have further a certain degree of the feeling of confidence (an ultimate and irreducible feeling) about A's being B, depending upon our estimate of the evidence and *frequently influenced by our wishes or fears*. In consequence of this, we risk a decision, not intellectual, but practical, by resolving to act in a certain case as if A were B

§ 51. Two remarks may here be made, one on the nature of this practical decision, the other on the inclination, or feeling of confidence, which accompanies opinion and belief

The decision in question is always practical,[a] a decision of the will; but it by no means follows that it has no theoretical application. In the case of a scientific investigation it frequently happens that the investigator has to choose between two opinions, to choose which of them he shall treat as if it were true, so as to embody it in his theory and make deductions from it, there being sufficient evidence for neither. The decision then, though practical, is made in the interests of a theory and the consequences of it may be purely theoretical.

The feeling of confidence which accompanies opinion and belief depends partly, at least, on what we call 'the strength of the evidence', and is stronger if the evidence seems stronger. This idea of strength involves an illusion. It is only of evidence which is *not* sufficient that we use the word 'strong' at all. In knowing, we can have nothing to do with the so-called *greater strength* of the evidence in question. The reason is we know that this strongest evidence in favour of an hypothesis, provided we can call it only strongest, is compatible with the falsity of the hypothesis, and so our confidence may be futile However strong evidence may be, it is not anything which can influence reality; yet, in this feeling of *increased confidence* with increased strength of evidence, we are *unconsciously treating it as if it could.* The strength of evidence is merely something for us; indeed we never speak of the strength of evidence except where we suppose that it doesn't prove what is stated, that is when the evidence is *not* sufficient. The increase in it is only an increase in our knowledge, yet we tend to confuse this advance of ours, our greater hold on the facts as we may call it, with some objective force gaining a greater hold on the objective facts. We know, that is, that the existence of the facts which constitute the evidence is not something physically stronger which overpowers the set of facts constituting the weaker evidence on the other side, and so necessitating A's being B; yet, in opinion and belief, we at least *behave* as if this were so and that, although the strongest cases of circumstantial evidence

[a The meaning is that a scientist may be led to a particular series of experiments (or the geometer to a line of inquiry) which he would not otherwise have attempted Cf 'practical needs may force us to make choice of one ⟨alternative⟩' Lotze, *Logic*, § 281, and § 280 end]

get refuted by the facts. The illusion is almost irresistible and is the rule, not the exception, with the student of physical science and in any department where probable reasoning is found. This fallacy is often illustrated in the treatment of probability by its mathematical measure, and in argument from statistics.

The illusion is reflected in language and subserved thereby. Thus we say A is *probably* B, where the adverb which refers solely to our subjective inclination is made to qualify grammatically the verb of objective existence. In any case language does not clearly and transparently show the real truth of the matter or the fallacy would not be so universal [1]

§ 52. By contrast with opinion and belief, both of which contain an element which is not clear thinking, we have hitherto confined the word judgement to true judgements

This however is not usual, and the fact that false judgements are supposed to be possible leads to a further consideration about erroneous states of consciousness, the existence of which has to some extent been implied already.

The judgement that all A is B is a decision on evidence that A is B, and we must return to the nature of this decision If we know that the evidence is insufficient, we cannot possibly decide or judge that A is B. What we really decide and judge about is the character of the evidence Though we cannot decide on insufficient evidence, we may form an opinion, and this remains true so long as we have any doubt whatever about the sufficiency of the evidence. Whether, therefore, or not every judgement is a decision on sufficient evidence—and no evidence is sufficient which does not absolutely prove, whether in other words every judgement is necessarily true or not, this, at least, is clear that, in judgement proper, if a man 'judges' A is B, he is himself sure that the evidence is sufficient

But now, this being so, is it possible that in judgement proper the man who is sure that the evidence is conclusive should be mistaken? If so, we should have two kinds of judgement, the common element being that, in both, the person who judges A is B is sure that the evidence proves that A is B. In the case, then, of one sort of judgement, the man is right and his

[1] Cf §§ 90–2 and Part III, ch 8.

judgement would be an apprehension; in the other case he would be wrong and his judgement would not be an apprehension. This distinction is natural and accords with ordinary usage, and what we have said of opinion goes so far to confirm it. For, though we may say the opinion that A is B is an untrue opinion when A is not B, it is not accurate to say that the man who forms this untrue opinion is deceived or mistaken, since by hypothesis, in consciously forming an opinion, he does not judge that A is B. He is quite aware that the evidence does not prove A is B, however much it may incline him to suppose that A is B and to act on that assumption. It follows that what we suppose to be deception, and mistake proper, has not been provided for under opinion So now if we assume, in the case of judgement, that, should the evidence be insufficient, a man must know it is so, and therefore decides only on sufficient evidence, there would be no place in judgement either for what seems to us mistake proper. There would then be no place for error proper, unless judgement could be false.

Nevertheless, this distinction of judgement into true and false is not so easy as it looks, and is indeed fraught with difficulties.

It is essential to suppose in false judgement, as above conceived, that the man should be sure that the evidence in favour of A is B is conclusive, for, if he were not sure, he would be aware that he was only forming an opinion. Suppose it possible that there should be such a mistake about evidence; what would be the ordinary way of describing the man's frame of mind? Probably, if people were thrown back on the ordinary categories, as they couldn't say it was knowledge they would call it opinion But this is an entirely incorrect use of the word opinion, for it is certainly not opinion to the man, who does not regard himself as merely forming an opinion. We may say it has no more value than opinion, but it is wrong to say that it is an opinion of the man's. For opinion implies consciousness of the insufficiency of the evidence, whereas it is just the characteristic of the case before us that the man is sure the evidence *is* sufficient. It is only a form of this to say the man does not know but thinks that he knows. But again, in any distinction that can be made between thinking and knowing, this is not true of the man's own frame of mind. He certainly does not

say to himself 'I think I know', for that must mean he knows he does not know.

Since however the man in question doesn't know and is unaware that he doesn't know and further behaves as if he did know, we doubtless incline to say of him that he thinks or supposes or believes that he knows A is B. But now we have seen that the man's attitude of mind to his own process of decision is not *thinking* in any sense in which we oppose thinking to knowing The fact is that, if we look first at what is decided, the man doesn't know that A is B, for *ex hypothesi* A is not B, nor does he 'think' that A is B in the sense of forming an opinion, nor does he suppose that A is B, nor does he believe, strictly, that A is B. The man who decides that evidence proves that A is B doesn't himself 'suppose' A is B—the word is quite alien to the attitude – and just the same is true of belief Secondly, if we look at his attitude to his own mental process, not only does he not 'think', 'suppose', or 'believe' that A is B, but also he does not think, suppose, or believe that he knows A is B, for these phrases are self-contradictory To his consciousness, then, from neither point of view, can we apply these words 'apprehension', 'opinion', 'supposition', or 'belief'.

Now this should cause us hesitation; though, perhaps, we may incline to think that the result is only that these categories –opinion, supposition, belief, and apprehension—do not apply to the man's consciousness and that it is both right and sufficient to say that he not only judges or decides on incomplete evidence, but decides that the incomplete evidence is proof, in fact to say that this is simply the nature of false judgement

We find ourselves, however, faced by a new and serious difficulty The man who makes the supposed kind of mistake decides that the evidence proves, and so he is in exactly the same frame of mind as when he decides that the evidence proves and it really does prove His conviction would be of just the same kind to himself in both cases, both when he doesn't know and where his conclusion is true (which we might at first be inclined to call knowledge) If this were not so, the man would at once become aware of the difference, see that he had not found the evidence conclusive, and would then either form an

opinion or look again at the evidence. His conviction then being of the same kind to himself when his conclusion was right and when it was wrong, he would be unable to distinguish the one mental state from the other; the confident state when right and the equally confident state when wrong. We might put this by saying that he has no criterion of truth or knowing That however would be misleading because it would imply the fallacy that there could be a general criterion of knowledge [a] by which we should know what was knowing and what was not

Alternatively we might say that the man doesn't know whether he is knowing or not However, the phrase 'know that we know' may again mislead, because it rather tends to imply that we could conduct a process, for instance proving that A is B, and then decide otherwise that it was a knowing process. But the decision itself would be a knowing process and so we should get into an unending series of knowings Moreover if we could so decide, in a new attitude of thought, about the given process, we should not decide that A is B until this second process and this second decision, namely the decision that the process of arriving at 'A is B' was a knowing process, had taken place

But in the first process, just because it is a knowing process (by hypothesis), we have already decided that A is B, indeed, it is by this process alone that we can so decide and not by any decision about the process itself The consciousness that the knowing process is a knowing process must be contained within the knowing process itself

A correct way to put the case before us seems to be that the two processes, the two states of mind in which the man conducts his arguments, the correct and the erroneous one, are quite indistinguishable to the man himself But if this is so, as the man does not know in the erroneous state of mind, neither can he know in the other state

The conclusion of the process is true in the latter case, but that does not make the supposed decision or judgement into knowledge Thus, if the given case of false judgement were

[a] A favourite position derived from Kant 'A sufficient and at the same time general mark of truth cannot possibly be found' *Kritik d r V*, ed 1, p 59, cf ib p 151]

really possible, we should never be sure that any demonstration was true and therefore there would be no such thing as demonstrative knowledge

§ 53 The result then appears to be this Judgement being decision on evidence after deliberation, there seem to be two alternatives First, either it is seen that the evidence is insufficient and then it is not decided or judged that A is B, and so at most there results the opinion that A is B, not the judgement that A is B, and the man is not deceived even if the opinion is untrue, inasmuch as he knows that it is not a certainty. Or else, it is not seen that the evidence is insufficient and the man decides on evidence which does not prove In this case he is entirely mistaken, and this would be false judgement But this assumption of false judgement leads to the impossibility of any demonstrative reasoning, that is, of any reasoning which would be knowledge in any proper sense

Hence we are led to a second alternative, that in what concerns reasoning the only kind of mistake is the mistaken opinion, which is not mistaken reasoning, and that in reasoning itself there can be no mistake This is the same as saying that there is no such thing as false judgement But this seems to leave no place for the most important kind of error for it seems obvious that a man may be wholly mistaken and, the evidence being insufficient, may say, if asked, that he knows A is B, and has not merely an opinion that A is B Thus he at least appears to judge and decide that A is B on insufficient evidence

The objections to both alternatives seem valid On the hypothesis that there can be false judgement we could never be sure that any 'demonstration' was knowledge Yet we are sure there is such, and so somehow false judgement is not possible On the other hand, there are cases of deception, in the full sense, and error is not confined to false opinion (in the proper sense of opinion) We conclude, therefore, that the analysis is imperfect, that there is real error other than false opinion, and that it does not lie in false judgement, taking judgement in its strict and proper sense

The complete answer must be deferred to the discussion of inference, but the distinction on which the solution turns will be made clear by a discussion of states of consciousness which

simulate judgement and which cannot be described in terms either of judgement, belief, or opinion.

§ 54. There is another fact of consciousness which is difficult to describe in terms of judgement, belief, or opinion Suppose that in our experience a thing A_1, or a kind of thing A-ness, has always had the characteristic X-ness. We may easily recognize that we do not know that X-ness necessitates A_1 or A-ness, but in our experience only A_1 or A-ness has had the characteristic X-ness There is nothing then in our previous experience to put us on the alert and make us remember that we do not know X-ness to be necessarily a sign of A_1 or of A-ness.

Suppose a case X_1 of the characteristic X-ness, which is not A, to occur for the first time [1] in our experience Sometimes it happens that we treat X_1 as if it were A_1 or A, or our attitude toward X_1 is as if it were A We take some practical step, in consequence, of such importance that when we reflect upon it we must say that only knowledge that X_1 was certainly A_1 or A could justify our action, if we thought clearly of what we were about We could not have acted upon knowledge that X_1 was A, for X_1 was not A Did we act on opinion or on belief (in the strict sense)? If so, we should have been conscious of risking something: but in the given case we acted unhesitatingly and were quite unconscious of risking anything.

For example, we see at a little distance a person whom 'we mistake for an acquaintance' and without hesitation perform some act which it would be a liberty to take with any one but an acquaintance, do something in fact which we rightly say we should not have done if we had ever suspected he was not an acquaintance We did not act on an opinion that it was our friend; for, in forming an opinion, we are aware that the evidence is insufficient and, if we had thought *that*, we should never have done the act. It seems more like belief; but, if we had consciously made it a matter of belief, we should have distinguished it from knowledge, and then again, *ex hypothesi*, we should not have done the act Probably one answer offered would be that, though we didn't know, we thought we knew. But this will not suffice Apart from the criticism we have already passed on this phrase itself, if we really thought we

[1] It need not be the first time, but this case is taken as the clearest

knew, we must have reflected and must have thought the evidence conclusive, whereas, *ex hypothesi*, any reflection shows it could not be conclusive

For the kind of consciousness we are contemplating, a momentous practical decision is not necessary, but we take the case where there is such, because it serves to bring out the essential feature, the absence of any sense of uncertainty or doubt, the action being one which would not be done if we felt the slightest uncertainty.

Perception, then, and judgement, apprehension, opinion and belief, seem all alike excluded It is true that, if asked, we might say 'I thought it was my friend'—'I believed it was my friend'—'I was sure it was my friend', but these expressions are all inaccurate The truth is, as will be admitted, that in the given case, when I perceive the familiar characteristics of my friend, it never 'enters into my head' that they could belong to any one else. I don't think about that at all, and so the processes of judgement, belief, and opinion are impossible The thinking process is not fully awakened, and this fact of consciousness throws light upon that general characteristic of all thinking, which at first may seem to us so empty, viz that it is an activity of consciousness [1]

I actually perceive X_1 and I treat it without reflection as if it were A That is, my frame of mind is as if I were perceiving something which was A, and I am in no sense conscious that I am perceiving something which might not be A, the existence of such an attitude or frame of mind being proved by the fact that I further treat X_1 as A, in the practical sense of acting as if it were. It would be truly said that, when I perceive X_1, I imagine A_1 in consequence of my previous experience But that is by no means enough I do much more, I treat X_1 as if it were actually A, in regard to my mental attitude which simulates judgement and cannot possibly be reduced to terms of imagination Nor is it a mistaking of the imagination of A_1 for the perception of it It is not that, perceiving X_1 and

[1] Doubtless we do not take seriously Plato's account of thought as the dialogue of the soul with itself for a true definition of thought, nevertheless, when it is a question whether we were thinking or not, it is often useful to ask, 'Did I say so and so to myself?' [*R* 437 c, *Tht* 189 e, *Sph* 263 e]

imagining A-ness in it, I think I am perceiving A_1. In the supposed case, seeing the back of a person exactly like the back of my friend, I imagine his face. I do not at all suppose I see it, but, without supposing I see it, I treat the person whose back I perceive as though he had the face of my friend, both as regards my mental attitude and the action consequent upon it.

Nor can we explain what happens by memory, in its proper sense of a conscious activity. I do not, in perceiving X_1, remember that all previous X's were A, or that in all previous experiences of X I experienced A-ness, for, in such a case as the one before us, we do not think of the past at all. And, if I did, remembering that in the past I experienced A along with X, I should notice the difference of the present experience as of X-ness and not of A-ness, and thus consciousness would be awakened to thinking about the relation of A-ness and X_1, which is just what doesn't happen. Thus we come to recognize an ultimate fact of illusion in our consciousness We perceive an X and, whereas we have always known X as A, while our experience has never in any way suggested that an X could be without A-ness, it does not occur to us to think of X_1 as not A This is not forming the positive judgement that X must be A Yet in this consciousness, which is in one direction unawakened, on the occasion of the perception of X_1, the imagination of A, together with the absence of any thought that an X might not be A, has the same effect that the thought that X must be A would have in the fully awakened consciousness We treat X_1, in the practical sense, as if it were A The difference in the two is that, in the awakened consciousness, such practical 'treatment' would be preceded by the judgement that, though A-ness is not perceived, it must be there In the unawakened consciousness there is no such judgement The peculiar attitude of consciousness which simulates judgement and which we have designated as treating an X as if it were A, without the judgement that X is A, eludes all attempts to express it in terms of the awakened consciousness or in any other terms but such as we have been giving peculiar to itself. For instance, it is erroneous, but it is not erroneous judgement, belief, or opinion.

It is futile, again,[a] to try to explain it as the inseparableness of the ideas of X-ness and A-ness. Such a formula is no explanation. We should find at once that the conception of 'idea' itself is confused, tending among other things to involve the fallacy of treating the 'idea' as though it could be something apart from our consciousness of it, and that it is otherwise quite unusable. ('Idea' is one of the most ambiguous words in philosophy.) We should find too that inseparableness is an unmanageable physical metaphor. In the end the formula, if intelligible at all, would have to be itself explained by help of a description of the facts which it is to explain.

Suppose it is said that the attitude of treating an X as A, which simulates judgement, simply means we 'cannot help thinking' of an X as A. There is a certain helplessness which causes our error, but what could be the 'thinking'? The term is perhaps chosen because the state of consciousness it refers to is not perceiving, and the term itself corresponds to a natural use of the word 'thinking' in phrases like 'I did so and so, thinking the man was my friend'. If however it means 'imagining', we have seen that that is not enough. Again the formula cannot mean that we think that an X cannot be conceived without A-ness, that is except as being with A, for a moment's reflection would show us this was untrue. Nor can it mean that I could not get X-ness and A-ness apart in thought (i.e. think that an X need not be A) if I tried, for I certainly could. The truth is that it does not occur to me to try and this is the real ground of my helplessness, so that we have to explain our 'cannot help thinking' of an X as A, by the absence of thinking about the relation of X-ness and A-ness in the ordinary sense of the word thinking.

Thus it seems that we do not make ourselves clearer by the use of the word thinking in the formula 'we cannot help thinking of X as A', which we offer as an explanation. For we have to explain that we do not mean thinking as ordinarily

[a] Referring probably to Locke. E.g. 'ideas that, in themselves, are not all of kin, come to be so united in some men's minds, that it is very hard to separate them, they always keep in company and the one no sooner at any time comes into the understanding, but its associate appears with it, and if they are more than two which are thus united, the whole gang, &c.' *Essay* II. 33. § 5. cf. ib. § 17.]

understood and then to explain what we do mean by describing that attitude toward X_1, as if it were A, which simulates the judgement that X is A

We return then to what seems the accurate account of what happens, viz that, perceiving X-ness to have always before been experienced with A-ness, and imagining A-ness in consequence as in X_1, it doesn't occur to us to think of X as without A and we behave as if A were there.

This agrees with an explanation which would often be given, which is, not that we thought X_1 was necessarily A, or even that we could not help thinking of an X as A, but that it never occurred to us to doubt it; in truth we never thought about it at all It agrees also with a special and distinct usage of ordinary speech, 'We were under the impression that X_1 was A' This is perhaps the one of the ordinary unphilosophic answers which is most adequate, for it seems chosen from a feeling that the ordinary activity of thought was not there. the metaphorical word 'impression' being used to suggest a certain passivity and helplessness

We have said that the reason for the peculiar state of consciousness we are here trying to recognize is that we have never experienced an X without A-ness, that is in the case we have taken It is now hardly necessary to guard against a misinterpretation of this The reason in such a case is not a conscious reason for us, in the sense of a premiss from which we infer. We do not argue that X_1 must be A, because in our experience all X has been A. It is merely the ground of our imagining A-ness when we perceive X_1, and of its not occurring to us that X could be without A-ness The kind of consciousness [a] here considered is of constant occurrence, but it is usually in instances which do not attract attention because not of the crucial character of that here selected. Besides there are numerous instances where our attitude towards the object does not attract attention because, though unwarranted, it does not lead to a mistake. That is, in many cases we unthinkingly treat X_1 as A and it also happens that it *is* A

[a] Kant said that the ground of error is 'the occult influence of the sensibility on the understanding or, to speak more precisely, on the judgement' *Logic*, Introduction, VII]

IV

THE DISTINCTION OF SUBJECT AND PREDICATE IN LOGIC AND GRAMMAR

§ 55 The 'proposition' in the older, 'judgement' in the modern terminology, is said to be analysed into subject and predicate, or, again, into subject, predicate and copula If this second analysis be adopted, propositions are supposed to be resolved, for logical purposes, into the form symbolized by S is P, where S is said to be the subject and P the predicate, while the verb 'is' is called the copula, as connecting the predicate with the subject

Now, according to the traditional definitions [a] of subject and predicate, the subject is what in the proposition or statement we are speaking about, and the predicate is what we say of the subject or, in a familiar form, the subject is that about which something is asserted, and the predicate is that which is asserted about it [1] This agrees with the derivation of the word 'predicate' from the Latin term *predicatum*, a translation of Aristotle's *κατηγορούμενον* Aristotle distinguishes within the proposition, *τὸ κατηγορούμενον* and *τὸ καθ' οὗ κατηγορεῖται*, what is said of something and that about which it is said He never defines the distinction, and gets into difficulties in consequence. The earliest known formulation [b] of the distinction, amounting to a definition of it, seems to be that given by Boethius He

[1] H W B Joseph, *Introduction to Logic*, pp vii, 145

[a] Cf 'Sagt man das Subject ist das, wovon etwas ausgesagt und das Pradikat ist das Ausgesagte, so ist dies etwas Triviales (commonplace) und man erfahrt dadurch nichts Naheres uber den Unterschied dieser beiden' Hegel, *Wissenschaft der Logik*, § 166 (*Werke*, 1840, vii, p 330)

[b] We can, I think trace this earlier, *ἐι ταῦθα γὰρ* (i e *Σωκρατης περιπατεῖ*) *τὸ μὲν Σ. ὑποκείμενος ὅρος λέγεται, τὸ δὲ περιπατεῖ κατηγορούμενος, διότι ἐν παντὶ κατηγορικῷ λόγῳ τὸ μέν ἐστι περὶ οὗ ὁ λόγος, τὸ δὲ περὶ ἐκείου λεγόμενον, καὶ τὸ μὲν περὶ οὗ ὁ λόγος. ὑποκείμενον λέγεται ὡς δεχόμενον τὰς κατ' αὐτοῦ κατηγορίας, τὸ δὲ περὶ αὐτοῦ λεγόμενον . κατηγορούμενον ὡς κατ' ἐκείνου ἀγορευόμενον καὶ λεγομενον*, Ammonius *in Aᵐ De Interpretatione*, pp 7^{32}–8^{4} The copula is called *προσκατηγορούμειον* A contemporary of Boethius, he professes to give the doctrine of Proclus (410 85 A D) The definition originated probably in the grammarians, e g 'alterum (sc verbum) est quod loquimur, alterum (sc nomen) de quo loquimur' Quintilian, *Inst* i 4]

says :—' The parts of simple enunciation are subject and predicate : the subject is what supports the predicate locution, . . the predicate is what is said concerning the subject.' [1] Here we at once observe a certain awkwardness in using the conception of the predicate in the definition of the subject, and the conception of the subject in the definition of the predicate. This is clearly the forerunner of the modern formulae that we are considering These formulae are both inaccurate and ambiguous For, in the first place, if we consider the part of the sentence to which the term ' predicate ' is applied, we shall find that the above definition does not accurately describe it. It is inaccurate to say that P is what is asserted or said of S. In the normal and non-technical use of language, if we asked what was asserted of S in this sentence, the answer would be not simply P but that S is P If some one, for instance, said Jones was a good artist, and some one else, hearing imperfectly, asked ' what was said of Jones ? ', the answer would not be ' a good artist ', nor would any one reply " ' a good artist ' was said of Jones ", but ' that he is a good artist '. The difficulty makes itself very clearly felt if we attempt to apply the given definition of predicate to the negative proposition In ' S is not P ', what is stated about the so-called subject S is ' that it is not P ' we cannot say that P is what is asserted or stated about S. Consistency with the procedure of calling P the predicate, in the affirmative statement S is P, can only be preserved either by confining the given definition of subject and predicate to the affirmative statement, or else by the erroneous device of reducing the negative to the affirmative form through the substitution of ' S is a not-P ' for ' S is not P ' The mistake which would be committed in such a reduction will be considered later, when we come to treat of the negative statement But the truth seems to be that the traditional definition is usually given with the affirmative statement alone in view, the negative being forgotten [a] This is but in consonance with the uncritical

[1] Simplicium uero enunciationum partes sunt subiectum atque predicatum, subiectum est, quod predicati suscipit dictionem predicatum uero est, quod dicitur de subiecto Boethius, *Introductio ad Categoricos syllogismos*, ed Basle, 1570, p 562 (Prantl, *Geschichte*, 1 p 696)

[a But cf ' A proposition, according to the common simple definition,

character of the development of this part of the ordinary logic

Another inaccuracy in the ordinary way of speaking about predication may be noted here It is usual to say that in the statement, steel is hard, what is predicated of steel is hard-*ness*, and yet, in the analysis of the proposition, it would be said that 'hard' is the predicate So that 'what is predicated' would actually not be the same as 'the predicate'

To return to the main point, we may say shortly that in the ordinary use of language it is the whole statement 'S is P' which is 'what is said about S' So, after all, the phrases 'what is said of' and 'what is asserted about' are not an ordinary, but a peculiar, use of language; in fact are really technical phrases found in logical treatises Thus, it being required to explain the technical term 'predicate', the explanation is (unconsciously) given by another technical phrase, which itself requires explanation

The accurate description then of P in 'S is P' is not that it is what is asserted of the subject, but simply that it is what the subject is asserted to be[1] But now, if we take this as a corrected definition of predicate, what would be the predicate in the statement 'A walks fast', a form of expression in which it is not said that A *is* anything? Statements of this latter form have to be considered, because, the given definition of subject and predicate being expressed without limitation, it is naturally implied that any form of statement or assertion has a subject and predicate. Now, if the implications of this definition are accurately followed (which, observe, involves discarding the copula from the general formula of the analysis of a proposition or statement), then 'Jones walks fast' has a predicate If this predicate is 'walks fast', then, as before, it would not be accurate to say that the predicate is what is asserted of the subject, for what is asserted of Jones is 'that Jones walks fast'. As in the proposition 'Williams is a good runner', what is called the predicate is, accurately speaking, not what

[1] *κατηγορούμενον* could mean 'that which the subject is stated to be' is discourse in which something is affirmed or denied of something The predicate is the name denoting that which is affirmed or denied, &c' Mill, *A System of Logic*, Bk I, ch 1, § 2 Cf however infra, p 249]

is asserted of the subject but what the subject is asserted to be, so in 'Jones walks fast' the supposed predicate would be what the subject is asserted to do We should thus have a different account of the predicate for each of these two propositions, whereas we require for it one and the same definition. This difficulty is not avoided by reduction of all statements to the type 'A is B', on the ground that in every statement in which the verb 'to be' (that is the copula) does not occur, there is nevertheless something about which an assertion is made and something asserted of it, and therefore, according to the given definition, both subject and predicate The fact is that, whereas the traditional analysis of the proposition is into subject, copula, and predicate, in the traditional definition of subject and predicate, the copula has been overlooked

But, besides these inaccuracies, the formula of the definition is ambiguous, and if it were our only guide we could not tell what was subject and what predicate in a given statement. How could we determine the subject and predicate, for instance, in 'Wheatley is farther than Headington from Oxford'? It would probably be said that Wheatley is the subject, for it is what we are thinking and speaking about, but we are also thinking and speaking about Headington and Oxford, for example that Headington is nearer to Oxford than Wheatley is.

§ 56 But now a distinction may exist, and be recognized in particular examples, and yet not be clearly formulated or understood in the abstract. By considering such examples we may perhaps discover what the ordinary imperfect and ambiguous definition is aiming at

Suppose a stranger in Oxford stops before the Bodleian Library, and asks his guide 'What building is that?' The reply is, 'That building is the Bodleian.' If we are to find an application for the ordinary definition of subject and predicate to the reply, it would be natural to say that what the guide was speaking about was the building pointed out by the stranger, and thus 'that building' would be the subject. What he says about the subject, again, might naturally be taken to be that it is the Bodleian So that, if the predicate is 'what is said of the subject', the predicate would be 'that that building is the Bodleian'.

Again, suppose instruction was being given in the properties

of glass, and the instructor said 'glass is elastic', it would be natural to say that what was being talked about and thought about was 'glass', and that what was said of it was that it was elastic Thus glass would be the subject and that it is elastic would be the predicate. The same would hold if we arrived at the statement ourselves by an investigation of the properties of glass

We observe that in the first example there is a peculiar stress accent upon the word 'Bodleian', which is absent from 'that building', and, in the second instance, that there is this same stress upon the word 'elastic', and that it is wanting from 'glass'. We observe, further, that in each case the stress accent is upon the part of the sentence which conveys the new information, and that in each case the words from which it is absent are those which correspond to what would seem to be the subject.

From these examples we may derive an unambiguous distinction, which seems to be the rationale of the traditional account. The subject of a statement may be defined as what we were thinking about as we thought it, or conceived it, before we arrived at the statement, or before we had the statement communicated to us, while the predicate is the new fact which we state about it or have communicated to us Or, to put it otherwise, the subject is what we were thinking of, as we thought it or conceived it, before forming the judgement, opinion, or belief which the statement expresses, or to which, at least, it corresponds, while the predicate is the new fact, or what we suppose to be the new fact, which we come to know about it; in other words the new thing which we state about it. Similarly in the case of a statement not strictly arrived at by ourselves, but communicated to us by another, the predicate for us would be what was stated by the speaker to be the new fact about that of which he was speaking, or what was intended to be the new information given us by him

We may arrive quite simply at the same principle by reflecting upon the implications of the ordinary definition. The predicate is defined as what is asserted of the subject Now an assertion is either for the information of others, or merely the verbal expression of knowledge or opinion we have arrived at for our-

selves. Clearly the purpose of such assertion is, in the one case, not to inform others of what they already know of a given subject, but to tell them something which will be new to them; and, in the other case, the expression, as a statement of knowledge or opinion which we have arrived at for ourselves, embodies something new. It is true that there may be occasions when we repeat to others what they know already, or to ourselves what we have already conceived, but that cannot be the original reason for making an assertion. Thus 'what is asserted' should properly be something in the subject considered or talked about which is new as compared with what we ourselves or our hearers originally conceived it to be [a]

§ 57. If we now examine the actual practice of grammatical treatises, we shall find that the analysis of sentences into subject and predicate does not agree with the principle which we have found to be properly implied in the ordinary definitions of these terms Consider first the analysis of sentences into subject and predicate. Suppose our stranger now wishes to find the Bodleian and asks 'Which building is the Bodleian?' The reply is '*That* building is the Bodleian'—in the same words as before, but with a different stress-accent It would now be natural to say that what was thought and spoken about was the Bodleian and that this therefore was the subject: that what was said of it was that the building pointed out was it So again, in the statement 'glass is elastic', if the matter of inquiry was elasticity and the question was what substances possessed the property of elasticity, glass, in accordance with the principle of the definition, would no longer be subject, and the kind of stress which fell upon 'elastic' when glass was the subject, would now be transferred to 'glass' In both cases the stress falls upon the

[a This whole doctrine of the stress on the predicate originated, I suspect, in Whately, 'Drift of a Proposition', *Elements of Logic*[9], II iv, § 1, esp 'And observe, that when a proposition is contrasted with one which has a *different predicate*, the Predicate is the emphatic word, as "this man is a *murderer*",' and so on I have corrected 'accent' to 'stress' all through, Wilson using the two words indifferently Whately draws attention also, properly, to verbal collocation and intonation, the last being ignored by Wilson See Paul, *Principien der Sprachgeschichte*[2], § 173 (English Trans, p 114) The English grammarian has to weigh (*a*) word-order, (*b*) stress, (*c*) intonation, (*d*) the use of form-words, and (*e*) inflection Sweet, *New English Grammar* (1900), § 81 et seq On p 229, infra, accent apparently = tone]

word or words in the sentence which correspond to the new information, and is absent from the words which correspond to what was supposed to be in the object before the information conveyed in the statement was acquired. Thus the same form of words should be analysed differently according as the words are the answer to one question or another.

But the ordinary analysis makes no distinction whatever between the cases where the same form of sentence 'glass is elastic' is the answer to two different questions. In both cases alike the nominative case to the verb—glass—is treated as the logical subject and 'elastic' (or elasticity) as the predicate.

The difference of stress is entirely ignored, a serious error, for the stress-accent is an important part of the whole expression This mistake invalidates the ordinary method, and shows its complete failure to realize the principle which underlies its own general definitions Nor is this surprising, since this principle has not come either to clear consciousness or to precise formulation.

Next consider the traditional account of a sentence like 'glass is *elastic*', where glass is both the grammatical and the true logical subject.

Take first, as is usual in grammar, the word elastic to be the predicate Can a justification be found for the ordinary restriction of the predicate to a part only of what is asserted of the subject? In the sentence 'glass is *elastic*' the word 'elastic' doesn't by itself convey the new information, for that requires the whole sentence-for its expression and thus the restriction of the predicate to the word 'elastic' is not really consistent with the definition of the predicate as what is asserted of the subject, for this does not properly mean any words but the fact which they express, that is, in this illustration, the elasticity of glass Elastic is however the word in the sentence which relates to the supposed new fact about glass, the other words only relating to what is already known (or supposed to be known) of the object. We might then give as a rationale of the ordinary account, where the word 'elastic' is called the predicate, that the predicate, as 'what is asserted of the subject', is confined to the word in the sentence referring to the new property of the subject

But, though this agrees with the ordinary usage where the

nominative case to the principal verb is the true subject, the application of the principle to the case where the nominative is not the true logical subject leads to a result quite at variance with the ordinary analysis. When the stress falls upon 'glass', in '*glass* is elastic', there is no word in the sentence which denotes the actual subject elasticity; the word 'elastic' refers to what is already known of the subject, and glass, which has the stress, is the only word which refers to the supposed new fact in the nature of elasticity, that it is found in glass Thus, according to the proposed formula, 'glass' would have to be the predicate In '*that* building is the Bodleian' (*with the* stress on 'that'), the predicate would similarly be 'that' or 'that building'.

But the ordinary analysis would never admit that 'glass' was the predicate in the given sentence and elasticity the subject. It would probably be said that if anything could be predicated of elasticity it would not be 'glass', but 'being in glass', it would not be acknowledged that elasticity was the subject at all or that anything was predicated of elasticity in '*glass* is elastic'. It is, therefore, impossible to find a rationale for the ordinary procedure on the method proposed, if subject and predicate are to be words in the sentence Besides the insuperable difficulty in the treatment of the predicate, in the sentence '*glass* is elastic', there is the further difficulty that, elasticity being the true subject, there is no word in the sentence to denote it

To meet this objection, let us suppose that the subject and predicate are not necessarily *words* in the sentence, nor even something denoted by words in the sentence, although one cannot say that this modified implication is at all recognized in grammatical practice We will restrict the predicate in a different way, and make 'elasticity' the predicate in the sentence 'glass is *elastic*'

We have then to ask what could be the rationale of an interpretation which makes elasticity the predicate in the given sentence

When it is said that what is predicated of glass is *elasticity*, the fact of elasticity is what is meant What, now, is the exact meaning of 'elasticity' when it is said to be what is predicated

of glass in the sentence 'glass is *elastic*'? It could not be the special elasticity of glass, for that would be elasticity as existing in glass, which is the same fact as glass's being elastic, or the fact that glass is elastic. Thus to say that elasticity is predicated of glass would amount to saying that it is predicated of glass that it is elastic. We should thus once more have the whole sentence as expressing 'what is asserted of the subject', whereas, by hypothesis, a more restricted view of the predicate is intended

It remains that 'elasticity' should be the quality or property of elasticity in general, and so a universal This agrees with the use of the word 'elastic', through which the so-called predicate elasticity is implied, because this adjective does not refer to any particular elasticity, but to elasticity in general. It agrees also with the meaning of 'being predicated of' in the usage according to which elasticity would be said to be 'predicated of glass', for that expression is taken to be the equivalent of being asserted to belong to glass So, if elasticity, as the predicate, meant the special elasticity of glass, we should have the tautologous statement that the elasticity of glass belonged to glass The elasticity, then, which is said to be the predicate, is a *kind* of being possessed by the subject glass, and the new information is that glass has this kind of being

§ 58. The general principle under which this would fall is (if we assume the rationale given for the distinction of subject and predicate) that the subject is an object as known or conceived before the information given about it in the statement, while the predicate is a kind of being asserted in the given statement to belong to the object, but not comprised in what was before conceived to belong to the object

This would apply also to an instance where the word following 'is' ('are', &c) was not an adjective but a common noun. If, however, instead of the adjective there were a noun which denotes an individual, as in 'that building is the Bodleian', according to the analogy of 'elasticity', or 'being elastic', in 'glass is *elastic*', the predicate should be 'being the Bodleian' The predicate here is not a kind of being in general, but that particular being which is being the Bodleian The same happens if the indicative of the verb 'to be' is followed by an adjective

or adjectival phrase so qualified that it can only refer to some individual or particular being, for instance, 'this blossom is further out to-day than it was yesterday'.

We may generalize from these examples thus —the subject being (according to the previous definition) the object as originally conceived by us, the new information conveyed in the statement is that the object has a certain reality or being other than that which we first thought it to have. This being is the predicate and it may, according to the form of statement, be either universal, that is a kind of being belonging to the subject, or particular, that is a part of the individual being of an individual subject or somehow identical with the whole of it. The foregoing would also hold for sentences in which the principal verb was not the verb 'to be', e g 'Jones walks fast' In these the predicate is a particular or a universal form of being, according as the verb is particularized or not

If then we assign such a meaning to the distinction of subject and predicate, the words in the sentence which relate to the predicate have that peculiar stress-accent given to the new part of the information, which we may call the predicative stress. These words themselves we may call predicative words, but they will not always denote the predicate. When, for example, 'elastic' is the predicative word in 'glass is elastic', the predicate is not denoted by the adjective 'elastic' but by the noun 'elasticity', a word which does not appear in the given statement In this case, however, the subject 'glass' is denoted by a word in the sentence.

When in the same sentence 'elasticity' is the subject, the predicate is 'being in glass' or 'property of glass in general', and is universal The 'predicative word' is now 'glass', and this has the stress, but it does not denote the predicate. The subject 'elasticity' is not denoted by any word in the sentence: all that corresponds to it is the adjective 'elastic', and on the analogy of 'predicative word', we may call 'elastic' the 'subject word'. In the case, then, where 'glass' has the predicative stress we have 'subject words' and 'predicative words', but neither subject nor predicate is denoted by words in the sentence.

In 'that building is the *Bodleian*', the subject is denoted by

the words in the sentence 'that building'; the predicate also, which is 'being the Bodleian', is represented in the sentence by the words 'the Bodleian'. Similarly, if the stress is upon 'that building', the subject and predicate are represented by words in the sentence.

The above analysis would make the distinction of subject and predicate, one not of words but of what is meant by the verbal expression. We may call this the strict logical analysis, and the distinction of the words of the sentence into 'subject words' and 'predicative words' may be called the grammatical analysis. This, of course, differs essentially from the ordinary grammatical analysis, which, however, cannot be justified by any reasonable interpretation of the ordinary definition of subject and predicate.

It remains to say that the choice of one or other method of formulating the distinction of subject and predicate, in accordance with what seems to be the only rationale of the traditional definition, is a matter of no great moment, for the distinction is of no importance in logic proper, and indeed of no use whatever for the solution of the usual problems of logic It is true that the terminology is in constant use in Logic in such problems, but, as we shall find, this is due to a mere illusion, the distinction being confused with something entirely different The main use of it seems to be to explain a certain form of stress-accent and its position in the sentence [a]

§ 59. It follows that the distinction between the logical subject and predicate would not be expressed by the grammatical form as such. For instance, in the sentence 'that building is the Bodleian', the nominative of the verb is the logical subject, if the sentence is the answer to one question, and it is the predicate, if the answer to another question. It is the stress and not the grammatical form which here marks the predicate and, in general, it is the stress only which marks the words which belong to the predicate—what we have called the predicative words. It is true that a special grammatical device, such as 'It is Jones who is rowing badly', may help to mark the predicate or the predicative words with more emphasis, but it

[a] Cf Ueberweg, *Logic*[8], § 68, p 160 'The logical meaning of the grammatical relations in the sentence has seldom been rightly appreciated', and the foot-note there with reference to Trendelenburg, *Log. Unt*[3], II 253.]

cannot do this apart from the stress, as we shall see, for the stress must fall on the word 'Jones'. With this stress, the sentence answers the question 'Who is it that is rowing badly?' Then 'Jones' is the predicate according to our definition. But the stress may fall on the verb 'is' and then the sentence answers the question 'Is it *Jones* who is rowing badly?' or '*Is* it Jones who is rowing badly?' The statement, having a different stress and answering a different question, requires different logical analysis and the predicate is no longer 'Jones'. What the predicate is may be seen better in an easier case of the same kind. If we ask 'what sort of a skater is Smith?' and the answer is 'Smith is a *good* skater', the stress will necessarily fall on 'good' and not on 'skater'—to answer with the stress on 'skater' would be absurd,—and the true predicate is 'Smith's goodness of skating'; accordingly the corresponding word in the sentence, namely '*good*', has the predicative stress The reason is that, before the information was given, Smith was conceived as a skater and so 'skater' belongs to the subject as we have defined subject; the new knowledge sought is what kind of skater he is Again, 'Smith is a good skater' may answer to the question 'what can Smith do well'; this time the stress will be on 'skater' and not on 'good' The subject is Smith conceived as being good at something or other, so that 'good' now belongs to the conception of the subject, which is the reason why it has no stress; and 'what Smith is good at' being the addition to this, in the new information, 'skater' has the stress and is by our definition the predicate.

Now, if we ask whether it is *Jones*[a] who is rowing badly or whether it *is* Jones who is rowing badly, we are thinking both of Jones and of the man who is rowing badly and Jones is conceived as being possibly the man who is rowing badly, or we should not ask the question Thus there are not two subjects to the statement,—'Jones' and 'the man who is rowing badly' —(though we have been thinking of both of them before), because information is not required about each separately, but only about them in a relation to one another As related to

[a In the answers in fact both *is* and *Jones* are stressed, and the intonation is different.]

one another and so conceived by us, they are not separate, but form for us a complex subject of which they are the elements, and what we want to know about this complex subject is whether its elements stand in a certain relation, whether they are related in the way that Jones is the bad rower The answer is given in the sentence 'It *is* Jones who is rowing badly' or 'Jones *is* the man who is rowing badly'. In these sentences Jones and the man who is rowing badly belong to the subject, as elements in what we were thinking about and about which we required information The word in either sentence, the addition of which to the words belonging to the subject brings the new information, is the verb 'is', consequently, according to the present theory, it is the predicative word and ought to be the only word in the sentence that has the stress. Now it is actually the only word with this stress in the given case, which is a confirmation of the theory.

In general then we see that, in a sentence of the form 'A is B', the stress may fall upon either A, or B, or on the verb 'is', according as the statement answers the question 'what is it that is B?', or 'what is A?', or 'Is A really B?', and the analysis into subject and predicate is different in each case; while there is no exception to the rule that it is the predicate or predicative word that has the stress. It results in general that, since the grammatical form does not distinguish the logical subject and predicate, we cannot determine these in a given sentence unless we have its context, or know where the stress falls. The question what is the subject and what the predicate in a given sentence is futile and admits of no answer, if we have no help either from context, or from stress, or from special grammatical form

V

THE ANALYSIS OF THE STATEMENT OR PROPOSITION INTO SUBJECT AND PREDICATE

§ 60. In the traditional theory of the analysis of propositions it is always assumed that, in order to discover its subject and predicate, a given proposition must be reduced to the form A is B, where A is the subject, B the predicate Strictly speaking, the form is supposed to be All X is B, or some X is B, or this (these) X is B, but these may be all comprehended in the one form A is B, or S is P. This does not agree with the view we have taken of the rationale of the ordinary definition. For according to this, the subject and predicate would not be fixed in this manner, S might sometimes be predicate, and P, or a corresponding noun, subject. But, apart from the view on which this criticism depends, the ordinary theory is inconsistent with itself on this point. For, while it provides apparently for only one analysis into subject and predicate, it is virtually committed to a variation in the terms which may be so designated. When a statement has to be reduced to the form A is B, there is more than one way of doing it. For instance, 'Hertford College faces the Bodleian' may be reduced to 'Hertford College is the building in front of the Bodleian' or 'the Bodleian is faced by Hertford College' 'A exceeds B' may be reduced to 'A is greater than B', or 'B is less than A'. The ordinary theory has no means of deciding that only one of the reductions is right, and would have to admit both, though the definition is expressed in language which implies that there is only one predicate and one subject in any given proposition.

But the assumption that every statement must be reduced to A is B leads to a more serious difficulty. If the reduction is necessary, the inevitable consequence is that forms of statement that are not of this kind have not a subject and predicate. In that case we could not say that every proposition had a subject

and predicate, but at most only that the meaning of every proposition can be expressed in a certain verbal form which has a subject and predicate, while in the other verbal form this is not the case The distinction then will be a verbal one, and peculiar to a special verbal form. If 'Williams runs well' must be reduced to the form 'Williams is a good runner' before we can find a subject and a predicate, then 'Williams runs well' cannot be analysed into subject and predicate This obvious result is in plain contradiction to the ordinary definition; for it would follow that statements like 'there is a God', 'it is raining', not in the form S is P, would not contain the distinction of something about which an assertion is made and what is asserted about it Thus strictly we should have the absurdity that nothing is asserted about anything in an assertion like 'Williams runs well'. If then reduction to the form S is P is held to be necessary, to avoid this absurdity we should have to abandon the definition of subject and predicate. Analysis of propositions would then be merely a sort of grammatical exercise, applying only to statements not of the verbal form S is P, and consisting in the reduction of them to this form, i.e. in finding a sentence of this grammatical form expressing the meaning of the statement to be analysed The nominative to the verb would be what is called the 'subject', the verb 'is' the copula, and the rest of the sentence (what the subject is said to be) the predicate Why the aforesaid parts of the sentence should receive just these designations of subject and predicate would be unexplained The terms might be retained as a technical nomenclature for parts of the sentence of the given form, but, on the one hand, it would be better then to use proper grammatical terms and call the subject simply the nominative to the verb, and, on the other hand, this is not what is meant in the ordinary theory, for the definitions of subject and predicate were not intended to define merely grammatical distinctions. However, the ordinary and so-called logical analysis is nothing but this kind of verbal reduction, whatever else it may be called. Moreover, if we were content to take this view of it and treat it as such, there would remain another question. It would not be enough to assume that the meaning of every proposition admitted of this kind of grammatical expression,

though it always turns out to be true in any particular case tried: there ought to be a demonstration that the reduction is always possible, and some reason given why it should be made. What is the attitude of the traditional logic to these questions? So far from discussing them, it is not even aware of them. The contradiction of the ordinary theory to the ordinary definition is not felt and the universal possibility of the reduction is assumed without any consciousness that it needs proof or justification.

§ 61. The reason for this oversight is that this part of logic has grown up in an entirely uncritical way; it dates in a manner from Aristotle, but it would be a great mistake to suppose that it originated in any carefully thought-out theory of the nature of the proposition and the meaning it expresses. If it had been so, we must have found in Aristotle or in the logic subsequently developed an important discussion of the form of assertion, showing that all propositions might be expressed in the form A is B, why it is important to effect such reduction, and why the parts of such a form should be called predicate and subject. But, as will be at once admitted, there is nothing of the kind either in Aristotle or in those successors of his who developed the traditional doctrine This is enough to show that the doctrine did not grow up critically. The fact is that it originated in a kind of accident; it so happened that the propositions to which attention was mainly directed in the beginnings of logic, and to which the distinction of predicate, and 'that of which the predicate is stated',[1] was applied, were of the form A is B. This was natural, because the main doctrine of this logic was the theory of the syllogism, and the given form is the form of the premisses and conclusion of the syllogism; even though in Aristotle's own logic the alternative forms 'B is in A' (heaviness is in lead), or 'B belongs to A',[a] often occur as its equivalent. The association thus begun between the distinction of subject and predicate and propositions of the form A is B was continued without due reflection in the subsequent development of logic. All propositions, when logic was mainly the theory of syllogism,

[1] *κατηγορούμενον, καθ' οὗ κατηγορεῖται.*

[[a] *ὑπάρχει τῷ* A *τὸ* B. 'in', *ἐν ὑποκειμένῳ*]

had to be reduced for logical purposes to the form A is B, or its equivalent, and so probably this got to be looked on as the natural form of the proposition for logical analysis, while subject and predicate came to be identified with the grammatical members with which they coincided in the application of this logical distinction to the form The application itself was in accordance with what has been supposed above to be the distinction of subject and predicate · for in the syllogism B is C, A is B, therefore A is C, the term A usually represents the subject about which information is wanted, while C is the new element in the conception of A which is got by the syllogism. Thus, in the conclusion, A would rightly be called the subject and C the predicate. In this particular case, then, of a proposition of the type A is C, subject and predicate happen to be A and C, so that the logical distinction happens to coincide with that of the members of this grammatical form ; and, this being the form mainly before the early logicians, the mistake was made of assuming without reflection that subject and predicate were just the members of it. It was a mistake because it could not be justified by the natural meaning of the undefined predicate,[1] nor even by the subsequent ambiguous definition, and certainly not by what we have supposed to be the rationale of that definition.

We have now to consider, in more detail first how the analysis of the statement in which the principal verb is the verb ' to be ' into the elements distinguished by the symbols in the form A is B, whether called subject and predicate or not, did originate, when through the study of the syllogism this form of proposition had become the form mainly considered in philosophy. We have secondly[2] to consider how Aristotle came to have his attention so engrossed in the syllogism that he treated the relation of the terms A and B, which is the form of the syllogistic premiss and conclusion (a relation unfortunately called in later logic the relation of predication), as if it were the only one with which demonstrative reasoning had to do, thus practically making the form of the syllogistic premiss the standard form of the statement in logic, and contributing to the subsequent tendency to regard this form as the one to which every state-

[1] κατηγορούμενον. [2] § 63.

ment has to be reduced for logical purposes. Our inquiry about Aristotle has to take this direction, because it is not the analysis and study of syllogistic argument, as such and taken by itself, which could bring about the result described, but merely the particular position the theory of the syllogism assumed in Aristotle's investigation of inference.

§ 62 The syllogism is a species of the general form of argument in which a relation between two terms is inferred from their relation to a third. The kind of relation with which the syllogism is concerned, misnamed predication, is the one, according to the Aristotelian theory, with which valid argument or demonstrative reasoning has to do If Aristotle had begun his study of valid argument by an examination of scientific reasoning, such as existed in his time in geometry (the most natural and the best course), he might have been led to observe two essential features of it. The first is that while in geometry we constantly find that two terms A and C are being related to one another by the discovery of their relation to a third term B, that relation is constantly not that of A's being C or, as it is said, C's being predicated of A, but, for instance, such relations as A's equality to C, or A's bisecting C. That this constantly happens is obvious, and afterwards we shall inquire if it is not what always happens. He might then have seen that the relation important in geometry is not the so-called one of predication; or at least that this relation is not the one with which geometrical reasoning is always or even principally concerned. That should have been enough to have prevented Aristotle from giving the false importance he did to the form A is B, and from making it, as he did in effect, the form in which every statement ought to be expressed for accurate representation of the reasoning. The second feature he might have noticed is that propositions continually occur in geometrical theorems which are not naturally expressed in the form A is B, and can only be reduced to it with difficulty, together with the important fact that the reasoning is simpler and plainer without the reduction. Now the truth seems to be, and this is confirmed by other features of the Aristotelian logic, that he did *not* base his theory of inference on a study of scientific methods, but on the characteristics of the arguments used in the philosophic and rhetorical

debating so much in vogue at the time (dialectic, as it was called); and to understand his procedure we must go back to Socrates.

The inquiries of Socrates, which had such a powerfully stimulating effect, were not properly logical or metaphysical but led to the development of logic and metaphysic by his pupils and their followers. He sought for clear and accurate thinking, mainly in the special sphere of moral action, but the rigorousness of his method aroused interest in clear thinking and sound argument in general, and thus helped to awaken logical study. He wanted to find definite, certain rules for action, aspiring to make conduct *scientific*, and this led directly to the syllogistic form and to the predominance of statements with the verb 'to be' for their principal verb. For instance, he supposed that, in order to determine how to act justly, we have to discover what justice is, and to express it in a definition. When the characteristics of justice were known we should decide that a given act is just or not just, according as it has these characteristics or not. The reasoning then would be: such and such a kind of act is just: this act is of that kind · therefore it is just. This is an inference in the first figure, of the kind Aristotle afterwards called the scientific syllogism.[1] And Aristotle himself observes that it was to get such an argument that Socrates conducted his search for definitions, 'He was searching for definitions and he was right to do so, for he was searching for inference and the definition is the principle (or ground) of inferences'.[2] Socratic questions then took the form 'what is it that so and so is?' and thus the answers were of the form A is B. He taught that the main thing to aim at was 'knowledge of what things are'.[3] Thus this form A is B was in the discourses of Socrates the main and normal form, and the knowledge he mainly sought, the proper understanding of a particular action, was syllogistic, being the subsumption of a particular case under a universal definition.

The same kind of search for definitions is prominent in the dialogues of Plato, and the activity of debate connected with

[1] *συλλογισμὸς ἐπιστημονικός.*

[2] *εὐλόγως ἐζήτει τὸ τί ἐστι. συλλογίζεσθαι γὰρ ἐζήτει, ἀρχὴ δὲ τῶν συλλογισμῶν τὸ τί ἐστιν.* Aristotle, *Met* 1078b 23.

[3] *σκοπῶν . . . τί ἕκαστον εἴη τῶν ὄντων.* Xen *Mem.* iv, 6, 1.

the teaching of the Sophists, whether this received its main impulse from the influence of Socrates or not, seems to have been generally concerned with the attempt to define current moral and political notions. It will be understood then how prominent and important, in the philosophical debating of the period, statements with the verb 'to be' for principal verb became. It seems probable that Aristotle was affected by this, and that, when he began to determine the general form of demonstrative inference, he was influenced by the Socratic ideal of complete knowledge, which was necessarily syllogistic in form. And as for the ordinary debating, half philosophical, half rhetorical, in which also the syllogism would be the form of demonstration, when a demonstration was attempted, his strong interest in this favourite intellectual exercise of the time is proved by the fact that he thought it worth while to write a laborious and exhaustive treatise, the *Topics*, on the principles of discussion, and on the various forms of fallacious arguments and rhetorical devices that were practised. The existence of this treatise and of the *Rhetoric* enables us to understand the bent of Aristotle's mind at the beginning of his studies, and thus to explain what might otherwise be a puzzle, the circumstance that he should not have begun his investigation of inference by examining the method of that science which by this time had been so accurately developed, the science of geometry. We are able to understand how his thoughts received a misleading direction at the outset, which made him miss the important lessons which in all probability he would have learned had he been influenced by mathematics (in which he was well versed) instead of by philosophical and rhetorical debate. When he did come later to consider the method of the mathematical sciences, it was after he had written his general theory of the syllogism in the *Prior Analytics* and was already too committed to his view of the syllogism. He still treated the relation with which it was concerned, namely that of A and B in the proposition A is B, as the fundamental one with which reasoning had to do and, in the *Posterior Analytics*, fitted forcibly on to mathematical science, as the instrument of its advance, the form proper to the Socratic subsumption of the particular under the universal. Later in his philosophical progress, a particular

investigation in the *Metaphysics* [a] led him incidentally to a remark in which the true character of geometrical procedure is appreciated. But this led to nothing further and perhaps he did not realize how subversive it was of the *Posterior Analytics*. This will be explained when we come to discuss the method of geometry.[1]

§63. Our second question is: when attention came to be directed to the form of the syllogistic premiss, how came it to be analysed into three main elements; as it is when a general symbolization, such as all A is B, is given for it? How did such a sentence as 'All wrought-iron is malleable at a certain temperature' come to be reduced to three parts, and all its complexity represented by two letters and one word or at most two words? Of the three parts, one consists in all the words that follow 'is', grouped together as a unit and represented by one symbol, say B; another consists of the words preceding 'is' (except the word 'all'), similarly grouped as a unit and represented by one symbol, say A, so that the symbolization of the whole proposition is All A is B. We are so used to this that we may not have reflected that it requires to be accounted for. We are not asking whether these symbolic terms should have a certain technical designation, such as subject and predicate, but why just these elements should be distinguished and marked by symbols. The motive of it was not grammatical analysis, which would not be confined to the form with 'to be', and would not lead to symbolic representation of the sentence at all, but to distinctions like 'noun', 'verb', 'adjective', always with so-called concrete, and not symbolic, illustrations. Thus, in Aristotle himself, in the *De Interpretatione*, we find what is properly a logical treatise preceded by a grammatical analysis, which leads to such distinctions as noun and verb [2] but not to the symbolic representation and analysis of the proposition, nor to the distinction of predicate and subject. The analysis of the given form of proposition into the symbolic type 'All A is B'

[1] Part III, ch 3

[2] *ὄνομα, ῥῆμα.*

[a] *διαιροῦντες γὰρ εὑρίσκουσιν . . . καὶ διὰ τοῦτο ποιοῦντες γιγνώσκουσιν*, *Metaph.* 1051[a] 21–33 In the passage in question Aristotle is speaking of the process of discovery by analysis, and not of proof He would not, like Wilson, identify the two See, however, Ross, *Aristotle's Metaphysics*, II, p 268]

would be the immediate and natural result of the first logical reflection upon the syllogism and probably did not appear before it.

Syllogisms are of course given at first, not in a symbolic form, but in ordinary language expressing particular arguments. When logical reflection began to be exercised for the first time on the syllogism, it would become evident that there was a common element in the two premisses and that this common element connected them so as to make a conclusion from them possible. Again, however complex the common element may be and however many words there may be corresponding thereto, it is not the several members of it apart from one another which serve to connect the premisses and bring the conclusion, but the common element considered as one whole. Thus the common element would be recognized as an inseparable unity for the purpose of the argument. When accordingly the idea of representing the general form in symbols occurred, the set of words relating to the common element would get one symbol. Thus, in 'all wrought-iron is brittle · this is wrought-iron : therefore this is brittle', we should have one symbol, say B, for all that follows the word 'is' in the minor premiss, and the same symbol for all that precedes 'is' in the major premiss, except 'all'. This came to be called the middle term, with some confusion of word and thing.

Again, the part of the minor premiss that precedes 'is' (except 'all', 'this', &c.), however complex, was recognized as a whole and a unit (symbol A), not merely because it is what this premiss has in common with the conclusion (again excepting such words as 'all' and 'this'), though this draws attention to its unity, but for the more important reason that it is only in its unity and as an inseparable unity that it is connected with the middle term and, so also, only as an inseparable whole is it related to the major term in the conclusion. This is true, even when the affirmative syllogism is not of the scientific type and the minor has the form 'some A is B'. Thus, for the minor premiss, the symbolization 'All (this, some) A is B' would be arrived at: what is referred to by A or B, however manifold, only coming into the argument as an inseparable unit. This would be enough to suggest the same general form for the major

premiss, in which the term B already occurs, and so give it the form 'All B is C'. This would reduce the conclusion to the form 'All (this, some) A is C'. Moreover, a comparison of different syllogisms would easily show that the part following 'is' in the major premiss and conclusion might often be a single word, so that, according to the principles of symbolization, the correct general form of symbol to include each case would be a single symbol, such as C.

Whether the steps were just in this order or not, the essentials may be put as follows. The first logical reflection on particular syllogisms would show that, in a syllogism, two somethings were related to one another (each as a unity and a whole, whatever the number of its parts) through their relation to a third something, also as one whole and only entering into the argument as an inseparable whole, whatever the number of its parts. The convenience of symbolically representing a general form once understood, perhaps through the influence of mathematics, it would follow that, each of these somethings being thus recognized as a unit, the words corresponding to it would be represented by one symbol or 'term'. This would be natural for all terms, and in any case necessary, from the point of view of a symbolic analysis of the argument, for the minor term A and the middle term B. If these symbols are A, B and C, only the verb 'is' and the words 'all', 'this', &c., remain in the premisses and conclusion. So there would result the general symbolic form, 'All or this B is C, all or this or some A is B: all or this or some A is C'. In this way then might arise the analysis of the statement with 'is' as principal verb into three principal parts, the verb itself, and the two other terms as above described.

The question will naturally occur whether this type of sentence, so common in Socratic discussion, would not of itself and without reference to its place in the syllogism have suggested its own analysis One cannot say this is impossible, but it seems unlikely. In the first place, in a proposition of the form 'all ABC is DEF' (where we must suppose the symbols to represent definite words), it is true that ABC is treated as an inseparable unity, for it is only that which possesses the property ABC-ness undivided which is said to be DEF. There would be a motive,

then, for representing ABC by one symbol, say X, and we might write 'All X is DEF'. But it is not true that it is only DEF-ness undivided that always constitutes the quality which all X (=all ABC) is said to have. It is possible that X may be D, and not be thought of as D only in so far as D is a member of a complex whole DEF (for instance, 'all English frogs are amphibious—quadrupeds—that can swim',—you can say all English frogs can swim), and this might be true even if DEF were a definition. Thus, though the quality of being DEF is possessed as a unity by each X, there is not the same motive for representing it by one symbol as there is in the case of ABC. This in itself seems by no means decisive, especially since, if the idea of symbolization had already occurred at all, a comparison with statements having only one word after 'is' or 'are' would have suggested one symbol for the complex DEF as the proper general symbol to cover every particular case. But, secondly, there is a really strong reason for thinking the prominence of the given type of proposition in the Socratic method and in ordinary philosophic debate not at all likely to lead in itself to the familiar symbolism 'All A is B'. The need for such symbolism did not exist either in the Socratic search for definitions, or in the ordinary philosophical discussion of notions; and it could not naturally originate in either, because it was not necessary or even useful for the aims of either. The need would be first felt when systematic logic began in the recognition and study of the syllogism, and that this really originated the symbolic analysis of statements, with 'to be' for principal verb, is strongly supported by the fact that there seems to be no trace of such symbolism before the syllogistic logic of Aristotle. The symbolic analysis of the proposition does not appear until the syllogism appears, and that this analysis is not found in Plato is important for the issue before us. One thing seems certain: the logical formulation of the syllogism was enough of itself to necessitate the appearance of this symbolism, because it is just this symbolic analysis of the given form of sentence that is necessary to represent the general form of the syllogism in abstraction from particular syllogisms.

VI

THE CONFUSION OF PREDICATION WITH OBJECTIVE RELATIONS

§ 64. In the foregoing investigation we have considered only the origin of the general symbolic form fixed upon for statements with 'is' and 'are', and not any designation such as subject and predicate given to the symbols, or rather given to the parts of the sentence which the symbols represent. It will have become evident that the symbolic analysis is quite independent of the distinction of subject and predicate and does not arise out of any consideration of what is called predication. That symbolism would have come into existence through the analysis of the syllogism and as its necessary instrument, even if such a technical distinction as that of subject and predicate, or subject of assertion and what is asserted about it, had never suggested itself. Nor does the proof of this independence rest merely on what we have said about the syllogism. The result follows simply from an examination of what the symbolic terms really do mean in a proposition.

The symbolic terms, however, came to be designated and distinguished as subject and predicate, and by no other names. So much so that in the modern form of this part of logic the symbols themselves are given as S and P, which mean subject and predicate. Now, even if in the form A is B (remembering this stands for All, this, some X is B) it happened that A and B coincided always with the subject and predicate, which is quite untrue, it would be a great mistake to distinguish them only by these names, unless the relation between them was not only coincident but also identical with the relation of subject and predicate. But they are so far from being identical that the one relation has nothing whatever to do with the other. Modern logic has endorsed the mistake by the above-mentioned substitution of S and P for such symbols as A and B, and thus the modern practice, instead of improving the old symbolism,

has introduced a most serious error into it. The new form, being only appropriate if the relation of the given terms is solely that of predication, naturally suggests that that is actually the fact. But there is more than a suggestion, for the identification is actually left, in an implicit form at least, in the ordinary doctrine of the syllogism. We have already shown the mistake of supposing what the traditional logic really assumes, namely, that the distinction of subject and predicate belongs only to the form A is B and that it coincides with the distinction of A and B, but we have not shown the mistake in the identification of the two distinctions We shall consider the latter point and at the same time return to the former.

§ 65. If we assume the account of subject and predicate which seemed the most adequate to the reasonable features of the traditional definition and procedure, the subject and predicate are both of them objects of apprehension or opinion, but we apprehend them or conceive them as being what they are in themselves quite apart from the order of our apprehension of them, and even apart from their being apprehended at all. Subject and predicate then strictly mean objects, containing nothing whatever that belongs to our subjective apprehension or opinion They do not mean, for instance, our ideas or conceptions of the objects; for whatever these vague terms, idea and conception, may mean, they do represent something subjective and distinct from the objects of which they are said to be ideas or conceptions. We may put it thus. Subject and predicate mean not the idea or conception of an object, but the object which is said to be an object of the idea or conception. But, while the things called subject and predicate are objects without anything that belongs to our apprehension of them or our mode of conceiving them, the distinction of them as subject and predicate is entirely founded on our subjective apprehension of them, or our opinion about them, and on nothing in their own nature as apart from the fact that they are apprehended or conceived. It may be said to be a distinction not in them, but in their relation to our knowledge or opinion of them, and so not a relation between what they are in themselves apart from their being sometimes apprehended. This is the distinction of the one (as being apprehended earlier) from the other, as having

its objective relation to the former apprehended later. If we define object and objective, simply in reference to an apprehension, as 'what is apprehended' apart from the given apprehension of it (so that it would include what, from another point of view, might be called subjective, such as a feeling; because a feeling may be an *object* of opinion or knowledge), then we might say shortly that the subject and predicate are objects; but the distinction of them as subject and predicate is nothing in their objective nature and lies only in their relation to our subjective attitude of apprehension or opinion.

This difference of relation to our subjective attitude, in virtue of which we call the one object 'subject' and the other 'predicate', is not expressed in the verbal statement of our knowledge or opinion about them. There is nothing in the grammatical form, or verbal form in general, to indicate it. It is only the stress of the spoken words or the context that indicates it.

But not only is it true that the distinction of subject and predicate is not expressed or conveyed by any verbal form, but the distinction also does not coincide with any verbal distinction. Thus in the typical and standard form of the proposition, as it appears in the syllogistic logic, it is not true that the subject must be A and the predicate B. It is not even true that B is necessarily the predicative word or words, or A the word or words which belong to and indicate the subject. Thus the usual procedure of finding the subject and predicate in the matter of the statement by reducing it to the form 'A is B' is a fallacy.

If the distinction does not necessarily coincide with the relation between A and B in the form 'A is B', *a fortiori* it cannot be *identified* with this relation. The same follows from the fact that there is nothing in the verbal statement that indicates the distinction, for, if the true relation of A and B were that of subject and predicate, the words in the sentence which represent them, and their connexion in the sentence, must have shown this relation.

But the most important reason against the identification is found in what the statement really means. For it is this which is the ground of the other two reasons; it is because the sentence

means what it does that it neither indicates the distinction of subject and predicate, nor has a form which coincides with it, nor describes a relation which is identical with the distinction. To avoid ambiguity, we must be careful not to confuse what a statement or sentence means [1] with what, in a restricted and understood sense of the word 'express', it may be said to express. The statement 'glass is elastic' would often be said to be the expression of knowledge or opinion in the person pronouncing it; but the statement itself does not mean anything about anybody's knowledge or opinion and contains no reference to it. It professes to describe an objective fact, that glass has a certain property, and that is its sole meaning. In general, we may say, the statement always purports to describe something objective (in the sense explained), so that the distinction of subject and predicate, not being an objective fact but one depending on the merely subjective order of our thoughts, cannot possibly be identical with any relation which the sentence describes or means. Thus, in the particular form of statement before us, 'A is B', A means a certain object and B refers to a kind of being or a particular being which A has, and the relation between these is obviously just the objective relation of A's having this being to which B refers, or which B (in some cases) denotes This has nothing to do with the subjective order of our apprehension and so nothing to do with any proper distinction of subject and predicate. The identification, therefore, of the relation of A and B with the predicational relation seems such an obvious fallacy that we might think it could never really occur. But it does; in two forms—in the treatment of the syllogism and sometimes in the discussion of universals.

§ 66. In the theory of the syllogism it is usual to designate and distinguish the terms called major, minor, and middle by the relation of subject and predicate. We are told, for instance, that in the first figure of the syllogism the middle term has to be the predicate in one of the premisses and the subject in the other, and the distinction of the figures of the syllogism is made to turn on the different positions the middle term has in the premisses, whether, that is, it is subject or predicate. It may

[1] ['means'. Here there is a MS indication showing that a paragraph on 'meaning and expression' was intended to be inserted]

be, it is said, subject in both, predicate in both, or subject in one and predicate in the other, a distinction which is to give the three figures.[a] The major term is defined as the predicate of the conclusion, the minor term as its subject. This could only be justified if the relation of predication was identical with that of the terms; for in the logical analysis of the argument the terms must be distinguished by what is essential to them. The false identification, then, is implicit in this procedure of logic. But it gets direct and explicit expression when the syllogism is said to deal with the relation of predication; for this cannot merely mean that the relation it deals with happens to coincide with that of predication. If it were contended that the description of the terms by help of their supposed predicational position was merely a convenience, because they happen to coincide with subjects and predicates in the manner alleged, the answer is plain that, if they did, this description by the non-essential is quite absurd in logic But we must add that it cannot even serve any purpose of convenience, because it assumes what is utterly false, namely, that there is a fixed position in the sentence for subject and predicate, and it cannot be convenient to make an utterly false assumption in order to elucidate the essential character of an argument.

The truth, however, is that the ordinary procedure cannot be defended anyhow as a mere convenient use of one relation to indicate another. It does really involve the identification of the relations. What the true rationale of the description by means of the notions of subject and predicate may be we shall inquire presently. The mistake made is evident from what has been said about the meaning of the statement in general and about the true relation of the terms A and B in the statement of the form A is B, for this is the relation with which the syllogism has to do. But it is also directly evident from the obvious characteristics of the syllogism. The syllogism always deals with the connexion of the objective facts, in the sense we have given to 'objective'. It states that a fact represented by the statement called the conclusion is necessitated by two other facts represented by the premisses. This has nothing to do with

[a The reference is to Fowler, *Elements of Deductive Logic*, III, ch. iii, § 2, p. 86]

any order in our subjective apprehension of the elements in the premisses, or with our subjective attitude to the facts at all, or with anything grounded upon it.) How then can the ordinary mode of representing the syllogism and its terms be of real use? The reply is, that the description is really given by aid of the distinction between verbal forms within the sentence, as it is presented in the symbolic analysis of the proposition, of which the principal verb is 'to be'; and provided it is understood what elements in the form are meant it doesn't matter what they are called. The words subject and predicate are only justified in the theory as technical names for A and B in the form A is B. The names are utterly wrong, but that does not matter to the purpose in hand, just as I may call Smith and Taylor, Jones and Robinson. That will do for many purposes, as long as I consistently call Smith Jones, and Taylor Robinson. This is the simple explanation of the procedure and the reason why it seems to distinguish the terms of the syllogism. It all depends on the above distinction of the verbal or grammatical elements, the terms subject and predicate are quite unnecessary, and it would be both enough and more accurate to say that, any proposition being represented by the symbolic analysis 'all (this, some) X is Y', in the first figure of the syllogism the middle term was the X of one premiss and the Y of the other: in the second figure it was the Y in both premisses, and in the third figure the X in both premisses.

It might be suggested that the distinction could be made both without misuse of the words subject and predicate, and without symbols, by giving the grammatical description of the members of the syllogistic form of premiss. But there are two difficulties. The grammatical term nearest to the so-called subject is 'nominative case to the verb'; that, however, would not be adequate, because something more explicit than the term 'nominative case' is required. For the purposes of the syllogism, we must have the resolution of a nominative case into 'All, this, or some X'. Again, for the word or words corresponding to Y, in the form 'All (&c.), X is Y', there is no convenient grammatical term to cover all cases. Y may be either adjectival, or of noun form, whether an individual name or a general noun preceded in English by the indefinite article.

The fact is, that in grammar the false logical term 'predicate' has usurped the place of a proper grammatical designation of Y.

The distinction of the parts of the sentence made by the symbolic analysis not only affords the rationale of the ordinary description of the terms of the syllogism in the phraseology of subject and predicate, but is what in the end saves it from confusion. It is an error to say, for instance, that in the first figure of the syllogism the middle term is subject in one premiss and predicate in the other In *All B is C, All A is B. therefore* All A is C, the middle term B is the so-called predicate in the minor premiss, but it is not the subject of the major premiss, for, according to this logic, that subject is not B but *all* B. This is corrected by the above symbolic representation of the syllogism, which follows on the inaccurate definition. For in that symbolic representation it is said that B is the middle term. It would, therefore, be more accurate to define the terms solely by use of the symbolism and without any names such as subject and predicate for the symbols, in the manner already suggested. If the names subject and predicate are retained, it would be necessary to say, at least, that whereas the subject has the form 'All (this, some) X', the middle term is the X of the subject of the major premiss in the first figure. We should also require a modification in the use of the word 'predicate'; for it is not always true that the middle term is the predicate of the minor premiss (in the first figure): in 'all mammals are warm-blooded, the whale is a mammal. therefore the whale is warm-blooded', the predicate, according to this logic, of the minor premiss must be *a* mammal, but *a* mammal is not the middle term. We should have now to say that, whereas the predicate has the form Y, or *a* Y, the middle term is the Y of the predicate. Here, therefore, we find another inaccuracy in the ordinary description, the use of the word predicate in the attempt to define the distinction of the terms without the use of the symbols. If the symbols really were to be dispensed with, the logic we are considering would be put to it to describe what we have called the X of the subject and the Y of the predicate; for it has no convenient terminology for this at all. The fact that such a necessary piece of terminology has not even been considered shows the looseness of the analysis. The

symbolic analysis being the real clue to the ordinary distinction of the syllogistic terms and being what is really behind it, it would have been better to use it directly, in the manner described, for that would have prevented the confusion we have pointed out. But in any case it is evident that the mere description by word-forms in a sentence, however accurate it might be, is inadmissible from the point of view of logic. For the syllogism being concerned with the relations of objective facts, the distinction should not be merely by the verbal forms in which the facts are expressed, but by a description of the nature of the facts themselves.

The faultiness of the description by help of the verbal forms is seen within the ordinary syllogistic theory itself. For in this theory it is often said that in the syllogism two terms are related to one another by their relation to a third, which is called the middle term. But now, in the syllogism, 'all that is elastic is resilient, steel is elastic, therefore steel is resilient', steel and resilience are the two terms related to one another by means of their relation to elasticity as the middle term. But according to the description of the terms as subject and predicate, 'elastic' would have to be the middle term and 'resilient' the major term. For in the given description it is not said, in the case of 'All B is C, all A is B, therefore all A is C', that B-ness is the middle and C-ness the major, but that B is the one and C the other. The truth is, that the words subject and predicate ought never to appear in the theory of the syllogism; they are never wanted, because the syllogism has no concern with them whatever. This criticism suggests two questions.—What is the proper way to characterize the distinction between the forms of language corresponding to X and Y in the form All (some, this) X is Y? and, What is the objective relation of those facts to which X and Y refer? The second question has already been answered in general terms, but depends for its fuller treatment upon a discussion of the office of grammatical forms in the sentence in general, a discussion to which the first question belongs.

§ 67. The other false identification of the relation of subject and predicate with an objective relation is one found sometimes in the language used about the relation of universal and par-

ticular. Thus it will be said that Plato's problem in his theory of Ideas was to account for the predication of the universal (which is one) of many individuals. This is a very unguarded way of putting the facts. The problem of the unity of the universal in the plurality of its particulars which Plato had before him is a question about objective facts, and has nothing to do with predication, which is grounded on something subjective It is true that Plato may put the problem in the form, 'why do we call many individuals by the same name?'; just as he puts another problem, about the unity of the thing and the plurality of its attributes, in the form, 'why do we call the same thing by many names?' But the 'why' precisely means 'what objective ground is there for such language', otherwise the question would be trivial and absolutely devoid of interest. The question is naturally put with this reference to language, because it implies that our ordinary language of itself betrays the difficulty. We are constantly speaking in a way which presupposes a very puzzling relation in the facts. It is no difficulty in language or assertion, as language or assertion, but a difficulty about the fact which the language implies. Yet it is important to philosophy to note the language, because it is valuable testimony to the reality of what puzzles us that it is just our ordinary language which does imply it, and not merely the language of any special metaphysical investigation, which might naturally be suspected of artificiality.

Thus, it is an entire misunderstanding of the situation to represent what is a problem of fact by terminology proper to a problem of expression The difficulty involved is not one of expression or of linguistic form at all, it is a difficulty that only exists because of what the language means.

The futility of representing the problem of the relation of universal and particular as one of predication, or as *the* problem of predication, is revealed at once if we demand, as we reasonably may, that the technical term 'predication' be replaced by what it means. If predication means simply assertion, it would be absurd to describe the metaphysical difficulty of the inherence of the universal in the particular as a problem of assertion Secondly, if predication refers to the special relation of certain members of a certain form of assertion (and we have seen that

it has come to this in the kind of logic before us), the verbal relation is not relevant unless it is the verbal expression of the relation in question. As a matter of fact, the so-called relation of predication between A and B in 'A is B' does not express the objective relation unless B is adjectival. So that a reference to the grammatical form would have to be introduced, a consideration which helps to show the futility of the identification in question But, if the relation of predication, or some species of it, were the verbal expression of the relation of universal and particular, it would still be absurd to describe the problem of the relation of certain objective facts as the problem of their linguistic expression. Obviously, the only excuse for describing Plato's problem as a problem of predication would be that we are thus giving the essential character of the relation itself. Thus the description is convicted of futility unless it is seriously meant that the relation of universal and particular is a relation, or *the* relation, of so-called predication

§ 68. It will follow that the designation of the terms A and B by the names subject and predicate, and their distinction by these names only in the symbolic form of statement, all (some, this) A is B, is erroneous on any reasonable interpretation of the word 'predicate'. The standing principle of the traditional logic, that the subject and predicate of a given proposition are to be found by resolving it into the grammatical form A is B, would also be an illusion, and the resolution itself little better than a grammatical exercise The traditional logic has neither attempted to give a proof that every statement does admit of such a resolution, nor inquired into the significance of this fact. The traditional procedure is thus not the outcome of any theory, but has grown up uncritically out of an unguarded practice of Aristotle's, and it is a mistake to take it seriously as if it represented some profound doctrine. It is connected with the symbolic representation of the proposition, which again grew out of the needs of the syllogism. This mistaken designation of the symbolic terms and the ordinary distinction of subject and predicate within the form of statement (A is B), of which 'to be' is the principal verb, dates indeed from Aristotle, presumably the inventor of the symbolic analysis itself. In his investigations of the syllogism this would arise naturally because

in the form A is B, when a proposition in a syllogism (and, as we have seen, it was to represent the general form of syllogistic proposition that the symbolism was invented), it would usually happen that A was the true logical subject of the reasoning, while B indicated the true logical predicate. This was extended by Aristotle in practice to any proposition of the form, whether in a syllogism or not. But further, the association of the logical subject with the symbol A in 'A is B', i e. with the nominative case to the verb, while natural in the syllogism, was also assisted probably by the fact that when information is given about any object, so that the object as previously conceived is the true logical subject, the tendency of language is to make the word which denotes the object, as thus conceived, the nominative case to the principal verb in the statement. This general but by no means invariable tendency would as such exercise an important influence on the first assignment of the terms subject and predicate to parts of the sentence. However this may be, the mistake in nomenclature and its origin in the symbolic analysis seem to date from Aristotle, and the general use of the form as the instrument of the discovery of the logical subject and predicate in any statement, a use which became explicit in the subsequent development of logic, seems to have originated in his practice.

To sum up our results. In grammar, we cannot retain the analysis of the sentence into subject and predicate, for it is inconsistent with any either usual or legitimate interpretation of subject and predicate.

In logic, the use of the form as the clue to the analysis of statements is erroneous and has led, in the theory of the proposition, to the confusion of expressing an objective distinction in a phraseology applicable only to the subjective distinction of subject and predicate. In the syllogism, the terms are in consequence incorrectly described in the language of subject and predicate, whereas their relation is an objective one to which these terms do not apply and for which the ordinary logic has no recognized designation.

VII

CERTAIN OBJECTIVE DISTINCTIONS AND DOCTRINES OF PREDICATION

§ 69. From a consideration of the form All (some, this) A is B the following questions arise for investigation:—the ground of the possibility of resolving any statement into the form A is B; the true theory of the so-called 'copula', or verb of being, in this form; and the meaning of the equation, in the mathematical sense, which itself belongs to the general question of the meaning of the so-called copula.

Out of the general discussion of the distinction of subject and predicate arise the following questions:—the relation of the ordinary doctrine of conversion to what has been given as the true principle of distinction of subject and predicate; the analysis in respect of subject and predicate of forms of expression other than statement, which involves a criticism of a certain modern doctrine of the nature of the interjection; and the criticism of another recent doctrine, to the effect that the subject of every existential judgement is the ultimate reality.

Some of these subjects require for their treatment an examination of the meaning of grammatical forms. Before these, again, we require to consider certain distinctions of the kind called metaphysical. The two investigations are necessarily connected with one another; for since the sentence or statement describes the nature of objects and not any attitude of ours to the objects described, in the way of apprehension or opinion, its meaning is wholly objective, in the sense we have already given to objective. That is, it is about *something* apprehended, in the case of knowledge for instance, and not about our apprehension of it. The general forms, then, in the language of the sentence can only mean forms of the objects apprehended, or the objects about which we think; they are forms of being, not of our thought about being, and so far it is vain to examine the forms of speech in order to find forms of thought. For even

if it should be contended by any chance that they are really forms of thought, though mistaken for forms of things, or objects of thought, we must reply that that doesn't in the least alter the *meaning* of these verbal forms; what these forms are intended to do is to express characteristics of realities or objects, not distinctions of thought. Even for the extremest idealistic view there is an object, whether called thought or not, to be distinguished always from the apprehension of it. And it is to the forms of this object as such, and not to the forms of our subjective apprehension of it, that the grammatical forms correspond. The traditional logic, being based on an examination of the form of statement or enunciation, comes upon 'categories' or 'conceptions' which are of the kind called metaphysical. If then logic, in general terms, is some study of the nature of our thinking, as opposed to a study of the nature of the objects thought about (which seems quite essential to the conception of logic, whatever differences there may be in its development), the question ought to arise why these conceptions should appear in logic at all. Now, whether their appearance in logic can be justified or not, the traditional analysis has proceeded with so little consciousness of the true character of what it is about that the issue does not even get raised. Yet, with the sole exception perhaps of the distinction of subject and predicate, the distinctions arrived at are of the objective kind and are what are usually called metaphysical; and necessarily so. Further, as to this very distinction of subject and predicate, the attempt to find it within the forms of the sentence, which do not provide for it, has produced a confusion of it with an objective relation.

This leads to another reason for the discussion of the objective distinctions. We require to elucidate the true nature of the relation of subject and predicate and to keep it apart from the distinctions with which it tends to be confounded. Modern logic, which substitutes 'judgement' (erroneously enough) for 'proposition' and 'concept' for 'term', is in fact founded upon the statement or proposition, because it really depends upon what the preceding logic had already got out of the analysis of the verbal statement. The idea of such 'judgement' with 'concepts' as its elements would lead no further, if it

were not for a study of the linguistic forms in which the supposed judgement is expressed. But we shall consider later the so-called judgement and concepts. We shall begin with some metaphysical or objective distinctions and follow this discussion by an account of the doctrine of predication in Aristotle, which it helps to elucidate. We shall then discuss the general relations which the grammatical forms of the sentence express or imply.[a]

§ 70.[b] There are implied then in our thought certain distinctions between elements in the object of a statement as elements in the object, which are therefore not distinctions between the apprehensions of these objects, and so not subjective in meaning. These must not be confused with the subjective distinction of logical subject and predicate and yet tend to be so confused. Such distinctions are the distinction of substance and attribute and a more general one including this, which may perhaps best be formulated as the distinction of *subject* and attribute.

〈In such inquiries as the present we have to keep apart two different questions. The first, what the real nature of the facts is to which a given word or notion refers, and the second, what we exactly mean ourselves, whether our notion is adequate to the facts or not. If we do not keep them apart, we may get to doubt the existence of a notion, whereas what we ought to be doubting is its adequacy to the facts, or we may be led to confuse considerations which belong to the facts with those which belong to the notion. The want of this precaution is one of the chief causes of perplexity in such modern questions as 'What is life? What is force? and the like. There will be incurable confusion if we do not first ask what it is that we ourselves exactly mean by the word 'life' which we are using in our problem. If we do ask the question, we are the more likely to understand what it is we really want, and sometimes our problem may take a new shape or disappear altogether.

The assumption of the distinctions before us as objective is rooted in human thought and, in the first instance, we have merely to try and find out what they are in our thought; to recognize them, not to vindicate them. After that we may

[a Cf. Locke, *Essay* II, xxxiii, § 19

b I have marked later additions to this section by 〈〉 See analysis of dates of fragments.]

inquire into their rationale and their relation to the facts with which they have to do.)

Ordinary and popular thinking, like the philosophies for instance of Aristotle and Locke, which give expression to it, is accustomed to regard certain existences or realities as complete and independent, others as dependent and existing only in dependence upon the independent realities.

Thus we think of a body as an independent existence, whereas its movement cannot exist independently but only as movement of the body; and so for its weight and surface, &c. Such a supposed independent reality, which we call a thing, in a special sense, is in fact a unity of real elements (volume, weight, shape, &c.) which cannot exist except in that unity, so that the being of one element seems to enter, in a way, into the being of another. Moreover such 'things' stand in relation to one another, and the relations of a thing to other things belong to its being.

In philosophic thinking then we come to see that things have not an independent being but that the being of one enters somehow into the being of another Such reflections may cause us difficulty as to the meaning and justification of a familiar phrase, viz. 'what a thing is in itself', which implies usually an independent being in the thing, expressly contrasted with its relations to others. But now every element of reality, however dependent, whether thing, or element in the being of a thing, or a relation between such realities, must, since it is definite and different from other realities, have in some sense a being of its own, or it could not be distinct from other realities. It must be something which they are not.

We thus get a justification for the phrase 'in itself'. We may say that what a something is, and other somethings are not, is 'what it is in itself'. The ordinary use of the phrase 'in itself' is somewhat narrower. Suppose a thing T_1 stands in a relation R to a thing T_2: standing in this particular relation belongs to the being of T_1 and to the being of nothing else, for nothing else can stand in this relation accurately understood. Yet we don't think of this as belonging to what T_1 is in itself, or as a part of what T_1 'is in itself'. In fact, if a given something has a part of its nature not constituted, or supposed not to be

constituted, by relation to anything else, 'what it is in itself' is usually restricted to this, and what it is in relation to anything else is excluded from it. Thus we should say that an orange was in itself yellow and round, but its being on the table we should not call 'what it is in itself'. This kind of limitation cannot be made in the case of a reality whose being is entirely constituted by relation to something else, e.g. the movement of a body, for clearly such relations cannot be excluded from what the given reality (e.g the movement) is in itself. Such a movement stands in a relation to the movement of another body, or to another movement of the same body, but is not constituted by this relation. Accordingly this relation would be excluded from what the first movement would be said to be 'in itself'.

(While things or substances are treated as absolutely independent realities, the dependent existences may, in their turn, have other existences depending on them. The absolute or relatively independent reality, considered in relation to what depends upon it, is what is called in philosophic thinking 'subject of attributes'. The main idea which determines the use of the word 'attribute' seems to be that of something which 'belongs' to something else, and is thus dependent on that something. But the ordinary use of the word attribute seems to cover two different things, the distinction between which is not provided for in philosophic language. The one is the dependent existence itself, e g. the point of a needle, the other is the possession of it by its subject, e g. the pointedness of a needle. As will be seen [1] when the distinction is more fully discussed, it is the latter which, according to the usage of language, should be called attribute. The former may be called element, but for clearness we might call it 'attribute-element', since (awkward as this expression is) it will prevent any doubt as to what is intended. Such an account of the proper meaning of attribute involves difficulties in view of expressions current in philosophic language. But a reminder may again be given that we have to recognize and describe actual facts in thought and language, not to vindicate them. Moreover it is no reason against the alleged existence of such mental facts that their implications,

[1] § 81.

if fully thought out, are fraught with difficulties. Ordinary, as distinguished from philosophic speech, attests the distinction of attribute and attribute-element in our thought, and provides for it without confusion. For the latter it uses the verb 'to have', e.g. 'a needle has a point', and for the former the verb 'to be', with the adjective corresponding to the name of the attribute, e.g. 'a needle is pointed'. It is quite artificial, as we know, to say that a needle *has* pointedness, and the natural usage of speech does not permit such an expression at all.〉

The subject as thus distinguished from the attributes, in either sense, might be supposed to be 'what the thing *is* in itself', or at least some special part of it, as opposed to an 'attribute-element' which it *has*, which also is not something which it *is*, e.g. we can say a body has surface but we cannot say the body *is* the surface. Yet we find, if we try to describe what this subject *is*, that we can only do it in terms of some of the things which we have been calling attributes in one sense or the other. For instance in the case of the spherical shape of a body we do not, it is true, say that the body *is* its roundness or its round surface, but we do say it *is* round.[a] 〈Though then the word 'is' gets used with reference to every attribute, the tendency is to restrict the being of the subject proper to what seems to be permanent and identical in its temporal existence. Here the subject again is undoubtedly conceived as something which possesses those 'attribute-elements' which are themselves apparently permanent.

Yet, when reflective thought is turned on such 'subject', we seem to find that nothing can be said of it except that it *is* what has these attribute-elements. In consequence the conception of subject, whether substance or not (though it is substance which is mainly in view), comes to be doubted, challenged as a metaphysical mystery, and finally treated as an illusion. Here two mistakes are made. In the first place, we find that subject (or substance) is merely omitted and the attributes retained, sometimes with such a definite statement as that the subject is only the sum of its attributes. This leaves the difficulty just where it was, because 'attribute' is necessarily 'attribute *of*' something, and presupposes that of which it is attribute. It is

[a] This, like the whole section, only holds within a certain group of languages.]

easily seen in any example that this could not be the sum of the attributes of which the given attribute was an item, and the discarded conception of subject (or substance) inevitably reappears. Moreover, there is the familiar criticism that something is required besides the attributes (in whichever sense) to hold them together in a whole. But the form of the criticism seems unguarded and may lead to a unity external to what has to be unified.

Secondly, it is a common fault in critical philosophy [a] to think that to pronounce a notion an illusion is enough to settle an issue, whereas it is imperative to go on to ask what is meant by illusion in the given case and how the illusion could come about. If this is done, it sometimes happens that the true character of what has been rejected may be revealed for the first time and vindicated, in essentials at least.〉

§ 71. There is, however, something to correspond to the distinction of 'subject' and 'attribute', though imperfectly formulated and understood, as indeed we might expect from the fact that ordinary language has a special form for it. The rationale of it seems to be not that the subject is its attribute-elements (language avoids any form which would mean that), nor that it is the sum of such elements. A reality, whether a thing or not, may be a unity which unites in itself different aspects or elements: not something over and above them, which has them, but their unified existence. They cannot exist except in this unity with one another, and they, in their unified existence, constitute the one thing or one element of reality in general whether thing or not.

〈The difficulty we raise about the notion of 'subject' is really a difficulty about this unity and we are puzzled merely because we think of the unity in the abstract.〉 How a diversity can form a unity, or how a unity must be the unity of diverse elements in one whole, depends on the particular instance and we understand it in the particular instance. Thus we see that a volume must have a surface and that a surface can only exist

[a Not, of course, referring to Kant. 'To trace any error to its source will often throw more light on the subject in hand than can be obtained if we rest satisfied with merely detecting and refuting it'—Whately, *Logic*, IV. 4, § 1. *ἡ γὰρ ὕστερον εὐπορία λύσις τῶν πρότερον ἀπορουμένων ἐστί, λύειν δ' οὐκ ἔστιν ἀγνοοῦντας τὸν δεσμόν.* Ar., *Metaph.*, 995[a] 28.]

as the surface of a volume; we seem also to see exactly what the nature of their unity is, and that no mysterious something outside the elements themselves is required to unify them. Such unity of diversity is not merely found in what we call things but also in what are elements of the existence of things. Thus a movement unites in itself direction and velocity, and we understand again exactly how it does unite them.

The unity of a mind in its attributes, in whichever sense, and whether conceived as temporal or not, is quite different from that of a material body, and this again we see by considering particular instances.[1]

Now, what have been called 'attribute-elements' are the elements in such a whole, and the 'subject' of them, as it is called, is this whole itself, as a unity. In this wide sense 'attribute'; as 'attribute-element', would include relations, which belong to the thing or other given reality. But this would not agree with the commoner usage of language. Attribute is often confined to the elements of 'what the thing, &c., is *in itself*', taken in the restricted sense explained above, so that relations would be excluded from them.

If the subject of an attribute is a thing, it is called a substance and the distinction becomes that of substance and attribute. ⟨As far as language goes, a mind is treated in no way as if it were different from a thing. For it, and what belongs to it, there is the same grammatical apparatus as for a substance and attribute, when the substance is a thing. We find this coming into recognition in Locke when the mind is spoken of as thinking substance.[a]

The question now arises inasmuch as some attribute-elements

[1] A notable example of loose thinking about unity in diversity is the modern representation of the individual as a universal because it is a unity in the diversity of its qualities, &c This doctrine, which is taken as advanced metaphysics, is nothing but a deplorable confusion, due to a mere verbal analogy helped out by the metaphysician's inclination to paradox, and absurdest results may be developed from it The unity of the universal *in* its particulars is totally different from the unity of the individual substance as a unity *of* its attributes (or attribute-elements) The particulars of a universal are not elements in its unity Whether the universal can be the unity of any elements at all is touched on later (§§ 78 and 82).

[a *Essay*, II. 23, § 22; IV. 3, § 6 Letters to Stillingfleet, p. 293 (*Works*, vol III, 1824).]

at least are themselves unities of elements, as in the instance of movement given above, how such a unity of diversity differs from a thing which is also a unity of elements. The answer implied in our ordinary conception is quite clear. The attribute-element (it would be said) is always a dependent reality, existing only as an element in a thing and not conceivable otherwise: a thing or substance is a reality not dependent on any other as element in the existence of that other, or, as Aristotle would say, the substance is a 'subject'[1] of which itself there is no other 'subject'. But then it may seem at first that this answer cannot be vindicated. For we come to see that things are not absolutely independent. They enter into relations with one another, and thereby become elements in a wider reality which comprehends them. In ordinary life we freely recognize that things or substances are related to one another; we do not realize how this affects their independence and we still think of them as the independent realities on which the relations themselves depend. It is philosophic reflection which seems to make this idea untenable.

Yet it is not a mere fallacy. We feel that there is a very real difference between a thing and what we have called attribute-elements, and that, somehow or another, the thing or substance has a higher degree of independence than the element. This feeling is justifiable, and precise expression can be found for it. The attribute-element has no nature of its own apart from its existence in the unity of the thing to which it belongs, and we can form no idea of it without taking account of the nature of the thing. On the other hand, the thing or substance, though as related to other things it may rightly be held an element in a wider reality which would be the 'one absolutely independent', has, nevertheless, a nature of its own, not at all constituted by its standing in relations to other substances, and so not constituted by its being an element in the larger unity to which these relations conduct. We recover thus the true independence of the thing as against the overstatement of its dependence. Language is faithful to the distinction. Whereas an attribute is always an attribute *of*, a thing, in respect of this independent nature, has a name which cannot be followed by the preposition

[1] Subject (substance) *ὑποκείμενον*.

'of', and, in respect of its dependence in the way of relations, has another name, a relative noun which can be followed by 'of', as 'captain of'. This is in strict accordance with the nature of a relation *between* two somethings in the proper sense of this expression. Each of the somethings has, in the cases to which this expression applies, a nature not constituted by their relation at all, and therefore not at all constituted by being a member of the system which the given relation necessitates.)

The distinction before us, whether in the general form of subject and attribute, or in the special one of substance and attribute, is a distinction in the objects of our apprehension or thinking and not in the order of our apprehensions or thoughts about them; it is, therefore, wholly different from the distinction of *logical* subject and predicate, with which it sometimes gets confounded. The subject in this objective sense we may conveniently term the 'metaphysical' subject, but it is best defined as the correlate of 'attribute' (in either sense of that word).

The distinction of subject from attribute is not only *not* that of logical subject from predicate, but a subject of attributes in a statement is not necessarily the logical subject. Thus in '*that* building is the Bodleian', 'that building' is a subject of attributes and also appears as such in the statement, but it is not the logical subject of the statement. (A statement can have only one logical subject, but it may contain several subjects of attributes.) Indeed, every element of reality to which the statement refers may be a subject of attributes, and may sometimes, though not always, be represented in the statement, at least implicitly, as such Thus in 'A walks fast', A's walking, as well as A, is a subject of attributes, and one of these is stated, viz. its having a certain speed. In 'the earth moves', on the other hand, the earth's movement, though a subject of attributes, is not represented as such in the statement.

The relation of subject and predicate is, as we have seen, in a certain sense reciprocal, for what is subject of a predicate in a statement in one context may be predicate of that predicate, as subject, in another, and what is predicate may become subject. But the relation of a subject to its attributes is not reciprocal. The subject cannot be an attribute of one of its own attributes.

The distinction we have here discussed of subject and attributes and relation concerns only particular existence—particular thing and particular attribute and particular relation. It is of this usage that we have been trying to find the rationale. How far a similar distinction may apply to universals we need not consider at present.[a]

§ 72. It is instructive now to turn to a doctrine of Aristotle's which illustrates the confusion resulting from neglect of this essential difference, the distinction of subject and attribute which is objective, and that of subject and predicate which, in any reasonable account of the meaning of predication, depends upon a subjective principle. We find in his writings the distinction of 'what is predicated'[1] and the (subject) 'of which this is predicated'[2] established and used for some time before reflection upon the distinction appears.

In the *Posterior Analytics* he has at last occasion to stop to consider it and we shall see the difficulties he gets into; difficulties which seem to arise from the fact that he has long been using the distinction, without having attempted to define exactly what it should mean.

With him substance is subject in the sense in which subject as the correlate of attribute is 'substrate'.[3] 'Accident',[4] which includes what he calls property as well as accident, comes nearest the word attribute, in English, but in the *Posterior Analytics* he appears, in one place at least, to limit accident to that which is not in the 'essence'.[5] The elements of the essence are 'the (attributes) predicated, or stated, in the what a thing is'.[6] In the *Metaphysics* he defines the 'substrate' as what cannot itself be predicated, while everything else is predicated of it Thus: 'now the substrate is that of which the rest are affirmed, while itself is said of no other.'[7] . . . 'not affirmed of a substrate but the rest affirmed of it'.[8] So too in the *Categories*.—'further first substances, because they are sub-

[1] *τὸ κατηγορούμενον.* [2] *τὸ καθ' οὗ κατηγορεῖται.* [3] *τὸ ὑποκείμενον.*
[4] *τὸ συμβεβηκός.* [5] *οὐσία.*
[6] *τὰ ἐν τῷ τί ἐστι κατηγορούμενα* *An Po* 83[a] 30.
[7] *τὸ δ' ὑποκείμενόν ἐστι καθ' οὗ τὰ ἄλλα λέγεται, ἐκεῖνο δ' αὐτὸ μηκέτι κατ' ἄλλου,* *Metaph.* 1028[b] 36.
[8] *μὴ καθ' ὑποκειμένου δὲ καθ' οὗ τὰ ἄλλα,* ib. 1029[a] 8.

[a] *Vide* Ockham, in Prantl, III, p. 368, note 851.]

strate to all else and all else is affirmed of them, or inheres in them, are therefore termed substances par excellence.'[1] . . . 'for of first substance (primary essence) there is no predicating; for it is said of no substrate'.[2] In the *Posterior Analytics*[3] he maintains that the substrate cannot properly stand in the predicate, but must be the subject of which predicates are affirmed.

Comparing 'that white object is a piece of wood'[4] with 'the piece of wood is white',[5] he says that the latter is predication proper,[6] where white is predicate and the substrate[7] is subject, whereas the former, in which the piece of wood, the substrate, appears as predicate, is either not to be called predication at all, or else is 'improper' and 'accidental' predication.[8]

What he says then here, in accordance with the other passages, is that substrate must properly, i.e. in proper predication, be subject: he doesn't say explicitly that the (logical) subject of predication must always be a substrate. Nevertheless, that would be the natural implication and, if this is not intended, the language is unguarded. But a passage which follows, if strictly interpreted, would seem to necessitate such an implication.[9] He says, apparently, that an accident must be predicated of a substrate (and cannot itself be a substrate) and cannot be predicated of an accident. From this it would seem that an accident could not be a subject for, if it were, it must have as predicate either a substrate, which would be impossible, or an accident, which, by the passage, is also impossible.

But whether we suppose him to mean that the subject of predication proper is always a substrate, or only that the substrate must always be a subject and never a predicate, the doctrine is full of confusion and quite untenable.

Whatever definition may be given of predicate and subject—and Aristotle never gave any definition of them, probably

[1] ἔτι αἱ πρῶται οὐσίαι διὰ τὸ τοῖς ἄλλοις ἅπασιν ὑποκεῖσθαι καὶ πάντα τὰ ἄλλα κατὰ τούτων κατηγορεῖσθαι ἢ ἐν ταύταις εἶναι, διὰ τοῦτο μάλιστα οὐσίαι λέγονται, *Cat* 2[b] 15.

[2] ἀπὸ μὲν γὰρ τῆς πρώτης οὐσίας οὐδεμία ἐστὶ κατηγορία, κατ᾽ οὐδενὸς γὰρ ὑποκειμένου λέγεται, *Cat* 3[a] 36

[3] *An Po* 83[a] 1.

[4] τὸ λευκὸν ἐκεῖνό ἐστι ξύλον.

[5] τὸ ξύλον λευκόν ἐστιν

[6] ἁπλῶς κατηγορεῖν.

[7] τὸ ὑποκείμενον, ib 83[a] 17

[8] εἰ δὴ δεῖ νομοθετῆσαι, ἔστω τὸ οὕτω λέγειν κατηγορεῖν, τὸ δ᾽ ἐκείνως ἤτοι μηδαμῶς κατηγορεῖν ἢ κατηγορεῖν μὲν μὴ ἁπλῶς, κατὰ συμβεβηκὸς δὲ κατηγορεῖν, ib 83[a] 14

[9] ὑποκείσθω δὴ τὸ κατηγορούμενον κατηγορεῖσθαι ἀεί, οὗ κατηγορεῖται, ἁπλῶς ἀλλὰ μὴ κατὰ συμβεβηκός. οὕτω γὰρ αἱ ἀποδείξεις ἀποδεικνύουσιν, ib. 83[a] 18.

thinking the words tell their own story—'predicating' is the subjective act of statement, and so the distinction of subject and predicate is a subjective one, a distinction in statement as statement, and not a distinction in objects. We cannot, therefore, suppose that Aristotle would consciously identify the objective relation of substance and attribute with this relation of the parts of a statement to one another, though his language may tend to such confusion. In fairness he may be interpreted to mean that while the subjective distinction of subject and predicate is different from that of subject and attribute (an objective distinction) the substrate should always be made the subject of a statement and never the predicate.

But then it is a serious defect to define the objective relation as he repeatedly does through the subjective one. It is a greater defect that he involves himself in a circular definition. He defines the substrate ('subject') through the notion of predication on the one hand, and on the other hand he defines predication by the notion of the 'subject'. For in order to distinguish proper from improper predication, he either defines proper predication as that in which a substrate is the subject, or at least defines improper predication as that which has a substrate as its predicate.

If we put the best, or most favourable, interpretation on Aristotle's doctrine, it would come, accurately put, to this:—in predication proper that which is the predicate, or the object signified by the predicate words, must stand in a certain objective relation to that which is made the subject of the statement. That is to say, the predicational form itself, in the verbal statement, properly implies that the object which the predicate words signify must stand in the given objective relation to the object which is signified by the subject words.

To maintain such a doctrine it would be absolutely necessary to define subject and predicate, and subject and (say) attribute apart, and then to show from their definitions that a substrate—a substance—could only be a subject Aristotle—a sign of his confusion here—makes no attempt to do this.

If he supposed that 'predicating' (or 'stating') had an obvious meaning and required no explanation, and if we take him to imply this definition—'that about which a statement is

made is the subject and what is stated about it is the predicate', —then the doctrine is quite obviously false. For anything may have a statement made about it, and anything may appear as what is stated or as an element in what is stated. In default again of a definition we may take the form of verbal expression and consider what Aristotle supposes to be subject and predicate in that. In the form all A is B, he takes A for subject and B for predicate. But, in this form, a substrate, i.e. an individual substance, may clearly take the place of either A or B, and that form of statement would be perfectly normal and correct.

If the predicational form again as such implies that what stands in the subject and what stands in the predicate must be in a certain objective relation, improper predication would be that in which the objects denoted by the subject and predicate did not stand in the relation.

It follows that improper predication would have to be called either false, or unintelligible nonsense, as the verbal form would, *ex hypothesi*, contradict the matter. But then neither Aristotle's formula nor his examples are right. In the formula 'not to be called predicating at all, or else improper predication', 'not at all' might correspond to 'nonsensical', as the nonsensical might fairly be said to be no predication at all. But the alternative 'improper' (*lit.* by accident) is incorrect, for this does not correspond to 'false'. As an analogy to the manner in which the contradiction of a verbal form produces falsity or nonsense we may take an instance in which the implications of a more concrete formula are contradicted; in 'A weighs twice as much as B', the words necessitate that in the given verbal form A and B can only apply to bodies. Hence, if we put for A something not a body, e g. 'the rule of three weighs twice as much as that chair', we get a statement which must either be called false or nonsense; but 'that white object is a piece of wood' is not nonsense, and is not necessarily false. Aristotle himself says it may be true—'we may say truly . . . that big (thing) is a piece of wood (or wood)'.[1]

Again, according to Aristotle, predication would have to imply in its very form that the predicate was attribute, in the wider sense, of the subject—as that on which it depended. In improper

[1] ἔστι γὰρ εἰπεῖν ἀληθῶς . . τὸ μέγα ἐκεῖνο ξύλον εἶναι. 1b. 83[a] 1.

predication, therefore, where the substrate is made predicate, the mistake or defect should be that the substrate was then represented as 'accident', or attribute in general, of something else as the subject. But this is not so in the instance which Aristotle gives of improper predication, 'the white thing is wood'. The substance called wood is not here represented as treated as the attribute of anything. What, according to Aristotle, would be the logical subject is the white (thing), which is not whiteness[1] but the white object, and the proposition does not mean that wood is an attribute of this On the contrary, the wood is identified in the statement with the substrate which has the attribute of whiteness It is therefore not treated as an attribute of anything else, but as a substrate. This appears even in Aristotle's own account of it: 'when I say the white thing is wood, I say that what has the attribute "being white" is wood'.[2] Thus, on his own showing, the statement has not that kind of fault which alone seems to make his distinction of proper and improper predication intelligible. Possibly he intends that, though in saying the white thing is wood we mean that the object which is white is also a piece of wood, not that the white object as such, i e. as white, is the subject of which wood is attribute,[3] the form of the expression nevertheless is only appropriate to, and only naturally has the latter meaning.[4] But, if the form of expression meant naturally something so contrary to what we really mean, we should not use it As a fact it does naturally mean what he says we mean by it, so much so that sometimes it is the only correct form of expression, and the form he approves would be entirely incorrect. If the question is 'what is that white thing yonder?', a correct form of answer and the natural one would be, 'That white thing yonder is a piece of wood'. 'That piece of wood is white' would be absurdly wrong in form and no one would speak thus.

If Aristotle had asked himself how the form he considers not true predication could arise, he would doubtless have seen that so far from being a form which was either not to be called

[1] 'the white' in Greek may mean white in the abstract, i e whiteness.

[2] *ὅταν μὲν γὰρ τὸ λευκὸν εἶναι φῶ ξύλον, τότε λέγω ὅτι ᾧ συμβέβηκε λευκῷ εἶναι ξύλον ἐστίν.*

[3] *οὐχ ὡς τὸ ὑποκείμενον τῷ ξύλῳ τὸ λευκόν ἐστιν.*

[4] After *συμβεβηκός* then in 82^{a} 8, we should supply *καίτοι ἔδει τὸ λεχθὲν σημαίνειν τοῦτο.*

predication at all or else not 'proper' but only 'accidental' predication, it was in a certain context the correct one, while the form he called 'proper' was quite inadmissible.

We must now ask what considerations led him to the mistake, and naturally look for an answer to what he says of the difference between the two forms of expression. The characteristic which he finds in the statement 'the white (thing) is wood' seems to be this. Whereas the subject of the statement is designated and defined by a certain 'accident', it is not as having this 'accident' that it gets the predicate attached to it. But the predicating a predicate of a subject only designated by one of its accidents, and not as having that accident, is not on that account accidental predication. To make it so would be downright confusion of an objective quality of the object matter with a quality belonging to our subjective statement. There is another sense which might possibly be given to the accidentalness. It might be said that in proper predication the attribute or attributes by which the subject is designated is what makes the subject the substrate which it is [1], and the substrate to which the predicate attaches In the 'improper' (it might be said) this is not so, the 'white' which designates the subject is not that aspect of it to which the predicate directly attaches, the predicate (it might be said) is only connected with the attribute which designates the subject by the fact that they both belong to the same substrate. This, according to Aristotle's own usage, might be called an 'accidental' *connexion* But this interpretation can hardly be allowed, because Aristotle would not say that the only ground of connexion between the two different things was inherence in the same subject, but that white attached directly to wood as to its substrate. They would not be treated in Aristotle as merely both in the same substrate, but wood would actually be the substrate of white. And, even if this interpretation were allowed, we must repeat the previous objection, that a predication which relates to an accidental connexion is not on that account itself 'accidental', for, if so, 'the wood is white' ought to be accidental predication, whereas, according to Aristotle, it is predication proper. And, if we consider the

[1] *ὅπερ καὶ ἐγένετο.* This seems to be the right way to translate this difficult clause

predication itself, we see that it is in no sense accidental, for what he calls the predicate is not attached to the white as white but to the substrate which has the white, i.e. it is attached to its proper substrate, in the sense of being identified with it. Thus according to his own view it would have to be 'properly' predicated.[1]

Aristotle's statement that 'the white (thing) is wood' ought either not to be called predication at all, or else improper and accidental predication, could be justified only if the phrase in question was asserted to be predicating wood of the attribute white (i.e. of whiteness, really) in the object, that is to say of the object's whiteness For to this (i e. to the view that wood was predicated of white) it would rightly be replied either that the relation of the two in the statement is not to be called predication at all, which would be a correct alternative; or that, if it was to be called predication, it would not be predication in the proper sense, for it would only mean that the one, the predicate (wood), was predicated of a subject of which the other was predicated, and, as we shall see, this is so far incorrect that white is not predicated at all in the sentence. But then no one does take such a view (i e. that wood is predicated of the attribute whiteness), so that Aristotle's supposed criticism would not be true of the form itself, but merely of a wrong representation of it.

The characteristic, however, which Aristotle appears to find in the form he considers improper predication and the kind of difficulty he founds upon it would not lead naturally to the exclusion of the substrate from the predicate position; it would only necessitate that the subject should be designated by that which made it the subject to which the predicate belonged, i.e. by that aspect of it which necessitates the predicate. Indeed, he has quite overlooked that here he is contradicting his own principles. Socrates is animal [2] he would regard as quite a proper form of predication. But in this sentence an animal means a substrate (substance), and a substrate as a substrate.

In his doctrine, in this and the other passage, that substrate cannot properly be a predicate, he seems obviously affected by a form of language which we shall have presently to discuss.

[1] *κατηγορούμενον ἁπλῶς.* [2] *Σωκράτης ἐστὶ ζῷον (sic)*

It is the rule in the earlier stage of language both in the race and in the individual, the tendency also in the simpler speech at all times, to make the *thing* the noun and the grammatical subject of the sentence (the nominative to the principal verb), and to express its attributes in their relation to it by verbs, or adjectives in combination with verbs. And it is not natural to represent the attributes by noun forms. Thus the realities which are considered as dependent are associated with these non-nominal forms, as the ones proper to them. Even in the advanced stage, when attributes have nouns to denote them, the adjectival forms, &c., remain peculiar to them, for 'things' cannot be put into such forms

Now Aristotle treats the grammatical subject (meaning by this the nominative to the verb) as the subject of statement and the rest of the sentence as what is stated of it, i.e as the predicate. In this way dependence upon some thing as substrate (subject) of which it was attribute, might be associated in his mind with the nature of a predicate Thus in chapter 2 of the *Categories* we find him confusing 'that which is said' with the attribute or attributive.

Finally, we may say that when Aristotle defines the substrate or metaphysical subject as that which is subject and never predicate he is confusing an objective with a subjective distinction.

§ 73. The confusions in the *Organon* which we have been investigating appear in a new dress in a modern doctrine to the effect that *the true subject of every 'existential' judgement is the 'ultimate reality'* [1] We may here examine this view in order to elucidate further the position we have been led to adopt.

What we have said implies so far that all statements or propositions are about reality—i c. some sort of being. Now the doctrine before us is not that all propositions are about reality, but that 'existential' propositions [2] are about reality and, further, have the 'ultimate reality' for their subject. The 'existential' propositions are, in general, singular propositions as distinguished from universal and hypothetical propositions; the universal categoricals in this theory being erroneously reduced to hypotheticals.

[1] F H Bradley's *Logic*, Bk. I, ch ii, § 42 (p 80).

[2] The word actually used is 'judgements', an inaccuracy already criticized.

The question as to whether the subject of such propositions is the ultimate reality cannot be profitably discussed unless we clearly define to ourselves what we mean by the subject of a judgement, and what by 'the ultimate reality'. When we have done this, we shall find that the doctrine and the importance attached to it depend on a mere confusion of analysis, and that, instead of being a bit of new metaphysics, it is only an ancient fallacy in a modern dress.

First as to the meaning of 'ultimate reality'. There seems here to be a special use of the word 'real'. It means the self-existent and that, again, apparently means the complete reality of the world, as being the only self-existent, in distinction from its partial manifestations. The theory must be tested by possible meanings of the word 'subject' in relation to 'judgement' or to statement.

It need hardly be said that in 'existential judgements' the ultimate reality is not what is sometimes called the grammatical subject. A second meaning of subject which we have distinguished is any element in the statement considered as what we called 'subject of statement (representing knowledge or opinion) in general'. This we have seen to be entirely relative, every element being subject in turn in this sense. Since this kind of subject necessarily means some element of reality as related to other elements, it cannot be the ultimate reality, as here understood.

But when, in logic, we speak of 'the subject of a judgement' *simpliciter*, we ought to mean what we have called the 'logical' subject, of which the correlative is 'predicate'. We have seen that what seems really implied in the traditional definition of subject and predicate is that some particular aspect of a given object known to us before the statement is arrived at, or, more accurately, the object conceived as having that kind of being, is the subject, and the predicate is what, in the mental activity which results in the statement, we come to know or suppose to be some other aspect of the reality or being of the same object. The subject then is the conception of the object with which we start, the predicate a further determination of it which we arrive at. Now, the conception of the ultimate reality is not the conception we thus start with as logical subject, seeking for some

further determination of it. Even if it could be the starting-point of a philosophic judgement, that is quite exceptional and does not belong to ordinary life; and knowledge or opinion could not possibly have begun in that way. No one, not even a philosopher, can start his activity of 'judging' with the general conception of an ultimate reality. For we cannot get such a conception till we have thought about particulars and, as we must start with particular realities, there must be many 'judgements' in which the logical subject is not the ultimate reality, indeed the vast majority of our 'judgements'. Nor would it be seriously contended that, nevertheless, the 'ultimate reality' ought to be the logical subject. For no one would say that the only subject about which we ought to seek information is the 'ultimate reality'.

Again, we distinguished what might be called a metaphysical use of 'subject'. Any reality (whether considered as independent and self-existent or not), as uniting elements within itself, is looked on as comparatively independent, in contrast with those elements considered as dependent upon it. The term here properly opposed to 'subject' is not 'predicate' but 'attribute'. Thus a movement may be said to have swiftness as attribute; and, though we do not take the movement for an independent reality, we think of the swiftness of the movement as less independent, depending as it does upon the movement. Or, again, we think of a reality not as relatively independent, but as absolutely so; and here again the elements which can be distinguished in it are considered to be dependent and attributes of it as their subject: and by such independent realities we mean what we ordinarily call individual things.[1]

Now it is such realities which are with Aristotle *ultimate* realities, i.e. self-existent, and his doctrine[2] is simply that the 'ultimate reality', as he conceives it, is the proper subject for predication.

But, in modern philosophy, when we ask whether these are independent ultimate realities, we easily find that they are not, because they are in relation to one another as members of the same whole of reality. This commonplace of modern speculation conducts us to the idea of a total reality, of which the individual

[1] For this and what follows compare § 70, and p. 200. [2] § 72.

things are themselves constituents, as the only independent and self-existent reality. This, then, would be the ultimate reality, since ultimate is equivalent to self-existent. It may be rightly said that the ultimate reality in this sense, as the total of reality in its unity, is the true subject, if 'subject' simply means the independent and self-existent. But this is a metaphysical distinction which has nothing whatever to do with our subjective act of judgement as such, and to say that this is the true or ultimate subject of 'judgement' is a mere verbal confusion of subject in this metaphysical sense with subject in some logical sense. The criticism we pass upon it is exactly the same as that which we passed upon Aristotle's view that, in predication proper, the subject must be the substrate, in the proper sense of that term. For, obviously, the doctrine before us is in essence the same as that, the only change being due to the advance in modern metaphysics whereby individual substances have ceased to be thought of as ultimate independent realities, since they are to be conceived as in relation to one another.

VIII

THE MEANING OF GRAMMATICAL FORMS

§ 74. THE difficulties in the Aristotelian doctrine and its modern congener illustrate the necessity in logic of some consideration of the meaning of grammatical forms. We shall find it necessary also to the examination of that analysis of the proposition on which the syllogistic theory rests, the doctrine that all statements can be reduced to the form all (some, &c.) A is B, or S is P. We shall see that the objective distinctions of subject, attribute and relation are reflected in the grammatical forms and explain them.

In developed language,[a] the name of anything whatever is a noun; or we may say that a word which denotes or signifies anything whatever, any element of reality whatever, whether particular subject or substance, or particular attribute or relation, or the universals of these, is a noun.

But the converse is not true. Not every noun is a name. 'Bird', for instance, is a noun; but bird does not denote any given particular bird, though 'this bird' does. Nor does it denote the universal of bird, for that is denoted by 'birdness'. Such nouns are not names, but the general forms of names; a true name being produced by the addition to them of a particularizing word or phrase, as 'that bird yonder'. The names of universals, as 'humility', are true names.

It may be added that a noun as the name of anything denotes it in general as something 'in itself', and different from other things. Grammarians sometimes divide nouns[b] into concrete, which signify particular things, and abstract, which signify their attributes. This is very inaccurate and confusing. Abstract is constantly used of universals, and abstractions

[a] Lotze, *Logic*, 1 1, § 33.

[b] The reference was specially to Kühner's Greek Grammar (old edition).

Much of this chapter was, curiously enough, modified, I think, in the light of the early sketch of Grammar in Aristotle, *Poetics*, ch 20, as elucidated by Bywater]

we know often stand for 'universals'. But the attributes of particulars are as particular as the subject to which they belong, and the distinction of universal and particular applies as much to attributes as to subjects. This verbal confusion (in grammar) may have contributed to the error of those who actually believe the solution of the difficulty about the relation of the universal and particular is that the universal is an attribute of the particular.

The other parts of speech are not the names of anything: they do not, in the proper sense of such terms, 'denote' or 'signify' any element of reality, the adjective 'heavy', for instance, does not denote, and is not the name of, the attribute of weight or heaviness, nor does it denote the subject of heaviness, for that is denoted by such a noun phrase as 'heavy thing'.

The failure to make this distinction causes confusion in the traditional treatment of terms in ordinary logic, especially in the account of connotation. We find adjectives regarded as names, and the confusion caused is irretrievable.[1]

Let us now consider how language represents the being of any element of reality with its attributes and relations, and take first individual things as substances. We will confine ourselves, in the first instance, to simple sentences, the more complex with relative clauses and subordinate verbs can be treated on the same principle.

The given thing is represented by its name, a noun in the nominative case. The fact of its having a given 'attribute-element' is expressed either by a verb form: e.g 'this star twinkles', or by an adjective, corresponding to the attribute (e.g. heavy to heaviness), together with the verb to be: e.g 'this stone is heavy'.

The adjective here does not denote or signify the attribute. The proper account of it seems to be that it is the verbal or grammatical form we use, when we wish to represent the attachment of the 'attribute-element' as 'attribute-element' to its subject.

If the connexion of attribute and subject is to be stated, if we wish, that is, to state that a certain subject has a certain

[1] On connotation and denotation see Part II, ch. 18.

'attribute-element', the verb is required, but if the connexion is presupposed and not made a matter of statement, the adjective is attached to the noun without the verb. In such a sentence, an attribute of the attribute itself (whether the connexion of the attribute and subject is expressed by a verb alone or by an adjective and verb) is signified by employing an adverb, which similarly does not denote, and is not the name of, the attribute of the attribute.

For the expression of relations there are prepositions, particles, inflexions, certain forms of noun and adjective, and certain kinds of verbs. The terms to be related are represented by words denoting them, which are nouns or noun-phrases,—names in the strict sense. The relations between such terms are expressed by means of

(*a*) adjectives, with or without the verb 'to be' whether special adjectives of relation, as 'equal', in combination with inflexions, prepositions, or particles; or by ordinary adjectives (which may be called attributive in contrast with the relative adjectives) subjected to a kind of inflexion, that is to say, in the comparative and superlative degrees, with particles (or in some languages, inflexions of a related term) e.g. 'harder than', *foedior omni crimine*. This is where the relation of the two terms is in respect of some common attribute indicated by the adjective which is in the comparative or superlative degree.

(*b*) nouns of relation such as 'guide', 'brother', 'friend'.

(*c*) verbs. These are either 'active' verbs; expressing a relation between two terms, one denoted by the nominative to the verb, and the other, usually, by the accusative; or passive verbs, implying relation to a cause expressed or understood· e.g.: 'he watereth the hills from above: the earth is filled with the fruit of thy works.' Both active and passive verbs are accompanied by inflexions and, sometimes, by prepositions. These two kinds of verbs might be called *relational* verbs, in distinction from those which express the attribute (as distinguished from a relation to a subject of attributes) and so might be called *attributive* verbs. Examples of

various kinds of the latter (attributive verbs) are: he falls down, he reddens, we are quarrelling, he walks about, he stops short.

(*d*) Prepositions, with inflexions and with, or without, the verb 'to be'; with which may be associated those particles which serve to relate clauses to one another, viz. the various conjunctions.

We notice, therefore, that the distinction of attributive and relational applies to nouns, adjectives, and verbs. A relation between A and B belongs to both, but to each in a different way (in general), uniting in itself these two aspects of itself inseparably. If the relation is to be stated in the aspect of it as belonging to A, A is in the nominative case to the verb. B also appears as a noun and may have an inflexion of some case other than the nominative.[1]

(We need not here discuss the more complicated sentences of relation where B appears as the nominative case itself to another verb.) Just as in the case of the adjective, if the relation is presupposed and not stated, the verb is not used. 'The brother of Jones has arrived.' And, as in the case of the attribute, the name of the relation—its noun—does not appear.[a]

§ 75. This then is the proper function of nouns, adjectives (when used), verbs and non-nominal forms in general, in all stages of language. But expression is not confined to this use of nouns, adjectives and other parts of speech.

The attachment of the attribute to the subject may be represented, for instance, by using a noun, the name of the attribute, for the attribute as well as for the subject, and then expressing their connexion as a relation between them, according to the grammatical formula for the relation of things. We say, for example, her face has great beauty, or his expression is one of undeniable charm, or to listen to him is torture. But this belongs to advanced thinking, it is not found in the simpler stages of the language. Moreover, even in the advanced stage,

[1] Nominative case = noun (or name) case, and seems associated with the idea of the noun, or name, as representing the thing named, in at least relative independence

[[a] The examples have in many cases been added by me in this and the following sections of this chapter.]

it is felt to be artificial, at least in many cases; the simpler form is recognized as normal and natural. The usage, then, with which we started, seems to be the tendency of the earlier stages of language, and of the simpler speech at all times. In this usage, if information is wanted either as to what substance has a given attribute or what attribute belongs to a given substance, the sentence is the same in form; and though the attribute may be the logical subject, the substance to which the attribute belongs is still nominative to the verb, the stress, however, indicating the logical predicate. This also remains natural in the later stages. So far there is no need for a noun as the name of an attribute

Information, however, may be wanted about the attribute 'in itself', in abstraction from its subject, not about the question to what subject the attribute belongs. For some cases the primitive form may be used For others a variant of it is more convenient, where the nominative to the verb is not the noun which is the name of the subject of the attribute simply, but that noun together with the adjective corresponding to the attribute, so that the information about the attribute is given in the form of a statement about the subject of the attribute as having that attribute. Thus if we want information about an attribute 'magnanimity', the answer may be in the form 'a magnanimous action is so and so'. But, as the attribute gets to be considered and studied more and more in abstraction from its subject, such modes of expression become less convenient and adequate, especially for the needs of science, and the use of the name of the attribute as apart from its subject, that is of nouns denoting attributes, is naturally developed and we get substantives like 'magnanimity', 'stability'.

The same grammatical forms are then used for the attribute-element (represented by a noun) and *its* attributes and relations. The same thing again happens for attributes of attributes. Similarly the names of relations, e.g. fraternity, monogamy, &c., come to be used and enter as nouns into the same grammatical system. Thus the use of the noun form, as nominative to the verb, for substances is extended to any subject of attributes or relations whatever; but, throughout the development, it remains normal to represent the attachment of attributes to a subject,

whatever the subject may be (whether substance or attribute) by verbal and adjectival forms in which the name of the attribute attached, a noun, does not appear; and the same rule holds for relations. Thus, if an attribute is to be represented as a subject of attributes or relations, in developed speech we employ a noun as nominative to the verb; but, if that same attribute is to be represented as belonging to its own subject, it is normal to use the corresponding adjective and not the noun which is the name of the attribute, and the same holds again for relations. Thus we say 'monogamy is normal in the Aryan races', but 'the Aryan races are normally monogamous'; 'portability is a characteristic of good currency', but 'gold coins are easily portable, in small quantities'.

§ 76. A study of the grammatical forms of the sentence would show us at once that the verb seems to have a special office in the way of conveying an assertion. A noun like 'John' or 'humility' denotes something, means something, but does not convey an assertion, nor does an adjective like 'heavy'. An extreme doctrine of the relation of the verb to assertion is the familiar modern view that, in the form A is B, the verb 'is' is a sign of predication and merely a sign of predication. This extreme view ought, indeed, to have been corrected by a consideration of other verbs, for their presence is enough to make a form of words an assertion and yet no one would say that that was their only function They obviously do not merely assert or, more accurately, help to produce an assertion, but show that some special kind of being, some quality, is asserted to belong to the subject. If we had to empty the verb 'to be' as copula of all meaning, except that of being a sign of predication, we should have to leave this same office alone to the more 'concrete' verbs, which would obviously be absurd.

We are thus conducted to a double aspect in the use and meaning of the verb. It is quite right to suppose the verb has a special function with regard to assertion which other words have not, but it would be wrong to base this (as perhaps is sometimes done) on the fact that there is no statement without a verb, for it is equally true that there can be no statement without a noun expressed or implied. The truth is rather that the verb is the only one of the general word-forms which has

an inflexion such that, when it is combined with other word-forms, an assertion is expressed. This itself implies that it is not the verb in general which serves this purpose, but only a particular inflexion of it, viz. the indicative mood. Its special function, then, does not lie in this, that there is no statement without it, but in the fact that a certain inflexion of it is necessary to indicate a statement, and that there is no other word-form which has a special inflexion for this purpose.

We are thus led naturally to make certain distinctions in the word-forms of the sentence. Instead of the utterly confusing distinction of denotation from connotation, it ought rather to be observed that the words in a sentence are divided into those which are *denotative* and those which are *not* Nouns, which are really names, belong to the denotative. (The general forms [1] of names like ' bird ' are not strictly denotative, but are the general forms of denotative words.) The non-denotative can be elements in a denotative expression like ' heavy ' in ' heavy guns '. This applies to adverbs, adjectives and verbs. Thus ' the rain which fell heavily yesterday ', as a whole, is a denotative expression (with non-denotative words as elements) and a noun-phrase. In general, denotative words, while denoting or meaning something, do not assert anything. There must be word-forms in the sentence which either themselves assert, or convey an assertion, or else do this in combination with denotative words. In either case we may call them assertive word-forms. It is the second which is the true alternative, and the assertive word-form which, in combination with other word-forms which are not assertive, indicates that there is an assertion, is the verb in the indicative mood. We have, then, the important distinction of ' assertive ' from ' denotative ' word-forms, as well as the wider distinction of ' denotative ' from ' non-denotative '.[2]

To resume then the double aspect of the verb. The verb in the indicative mood is the assertive word-form in the sense explained But it is not merely assertive. That is to say it doesn't merely signify that there is an assertion, the nature of what is asserted being conveyed only by words other than the verb (denotative words, or denotative words in combination with non-denotative), but it serves to indicate a part of the

[1] § 74 [2] Cf Part II, ch xviii.

nature of what is asserted, the other part being supplied by the other word-forms denotative and non-denotative. Thus the verb 'to run', in all its forms, involves the idea of the attribute of running and, in the indicative mood, when combined with the nominative case is not merely a sign of assertion but signifies also that the attribute of running is asserted of what is denoted by the nominative case.

Consider then the aspect of the verb as expressing part of the nature of what is asserted. Let us first exclude the verb 'to be' and consider the others. What are the characteristics of the verb? The most obvious is that it not only indicates a certain part of the being of an object, such as running, but (by means of its tense inflexions) the time also at which the object, which is subject of this attribute, possesses it. So Aristotle in the *De Interpretatione* distinguishes the verb from the noun as 'indicating, besides, *time*'.[1] Indeed the two characteristics of the verb which Aristotle detects are that it implies time and that it is a sign of that which is predicated of something else. Not a sign, observe, *that* it is predicated, for Aristotle does *not* say this, but 'a sign of things which are of the kind predicated about the substrate', i.e. of what is attributed to the substrate but is not itself substrate. Aristotle does not recognize clearly [a] the assertive symbolism in the verb

But now there are other non-denotative words, viz. adjectives like 'round', which imply a particular kind of attribute (roundness) and the attachment of an attribute-element (curved surface) to a subject, without, strictly speaking, denoting either, and which not having themselves any symbol of assertion serve, in combination with other words, to assert the attachment of an attribute to a subject In general these words imply a given attribute-element, but without any indication of its connexion with time, the time, that is, at which it may belong to a subject.

[1] 'Ρῆμα δέ ἐστι τὸ προσσημαῖνον χρόνον, οὗ μέρος οὐδὲν σημαίνει χωρίς, καὶ ἔστιν ἀεὶ τῶν καθ' ἑτέρου λεγομένων σημεῖον. . . οἷον τῶν καθ' ὑποκειμένου ἢ ἐν ὑποκειμένῳ *De Int* 16[b] 6–11

[a] He appears to do so explicitly. Αὐτὰ μὲν οὖν καθ' ἑαυτὰ λεγόμενα τὰ ῥήματα ὀνόματά ἐστι καὶ σημαίνει τι . . . ἀλλ' εἰ ἔστιν ἢ μὴ οὔπω σημαίνει· οὐδὲ γὰρ τὸ εἶναι ἢ τὸ μὴ εἶναι σημεῖόν ἐστι τοῦ πράγματος, . . αὐτὸ μὲν γὰρ οὐδέν ἐστι, προσσημαίνει δὲ σύνθεσίν τινα ἣν ἄνευ τῶν συγκειμένων οὐκ ἔστι νοῆσαι *De Int.* 16[b] 19.]

Unlike the verbs we are considering they do not, when combined with a nominative case, express any assertion but become only a part of a denotative phrase (say, the heavy gun will follow the first-line transport), that is, a phrase which denotes a subject as possessing the attribute-element. Thus we say 'heavy gun' instead of asserting that the gun is heavy.

Do the attributes implied by these words differ in kind from those implied by verbs, or is the difference merely that in the one case in the corresponding words there is an indication of the time of the existence of the attribute and in the other not; so that, conceivably, a given attribute might have corresponding to it both linguistic forms? The answer seems to be that there is a difference in kind. The verb (excluding *ex hypothesi* the verb 'to be') in its objective reference, as distinguished from the subjective act of assertion characteristic of it, has also the characteristic of corresponding to an important objective distinction, to what would usually be called a metaphysical category.

The thing or substance, besides remaining identical with itself through time, has also a changing existence in time. There is no such thing as mere change or absolute change. Events or time processes are only changes, as changes of something permanent, for instance, of a moving body, which has them. As a mere series or succession (if such a thing were possible) they would not be changes, or phases of a change; they can only be that as a series belonging to something which is not the series or a part of it; something which has the series, something to which the members of the series belong, and by reference to which alone they are elements of a change or changing process.

Now it is this something, subject or substance, which has them, which is properly said to change. The subject of the verb 'to change' cannot be the change itself, nor any phase of it. Thus it is actually true that only the identical can change and that there is no change unless there is an identity. Now, that which is identical in its changes, the changing substance, is not conceived as a mere identity but as having a definite character consisting of definite attributes or qualities, which remain permanent or identical in the change of the substance.

Besides this, there are attributes which are relatively per-

manent, states of the substance which remain identical through a certain time and don't change with the time (or at least are so thought of), but which are not absolutely permanent attributes of the being of the substance, as they may within its existence have a beginning and an end. Further, there are attributes which come into existence in the process of change (as, if a thing is stretched and gets a different shape, or if it gets a different colour or is in another place). Nevertheless these are not themselves processes of change. Their existence may even be momentary only, but still they are themselves not processes of change in the substance, processes which the subject is going through; they differ in fact from what we commonly regard as its activities or passivities (though we are not concerned here with the meaning or justification of these epithets). All these attributes, the first kind, those conceived as absolutely permanent, the second kind, those conceived as relatively permanent, and the third kind, those signifying short or momentary existence, have corresponding to them adjectival forms without the time indication of the verb.

The verb is concerned with the temporal process as a process, not with its isolated phases, such as are the third kind of attribute, but with the process itself. With the process, however, not in abstraction from the subject of it, but only and strictly as belonging to the subject, the subject being distinguished from the process as an identity (quite strictly again) in the time of the process, and as that which conducts the process or goes through the process. Both of these latter expressions may be comprised under the more general words 'sustain' or 'maintain'.

The subject then 'sustains' the process, and its identity as so doing is represented by one word which is a noun in the nominative case. Thus the verb 'to run', in the indicative, is not concerned with running in the abstract but with some one's conducting the process of running—'he runs', 'he ran'; the verb 'to fall', not with falling in the abstract but with some thing's falling or going through the process of falling. The verb is used with reference to the fact that some thing is the subject of a certain process in time, and in its tenses has a mark of the time of the process. Thus, apart from its assertive element, it

differs from the above-mentioned attributes in its objective reference. Its full use is in combination with the nominative to represent the assertion that something denoted by the nominative is subject and identical subject of a certain process in time.

But there are also verbs which, though they refer to the temporal existence of a subject which is identical in the various times of its existence, seem concerned with a temporal existence which is not really a process, inasmuch as it is not a changing state but remains constant for some period of time. Such verbs are, for example, 'stand', 'sit', 'gaze', 'rest', 'press' (when the pressure maintains an equilibrium). The explanation seems to be that these states are really conceived of as something going on, and so in effect as processes, in the following way. The given state is on the one hand of a transitory kind; one which might change at any moment and is entered on by a changing process which the subject goes through; on the other hand, it is conceived as being maintained or sustained from moment to moment by the subject to which it attaches, whether this maintenance is thought of as self-originated by this subject or as due to external necessitation. Thus the condition entered upon and maintained, or sustained, unchanging through a certain time is practically regarded as a process going on through the time, a process of which the phases are exactly alike. We must of course distinguish from this a metaphorical use. For instance, two straight lines are said to 'cut' one another, where there is no process in any sense.

Finally, the verb may appear to refer to something merely instantaneous. This, nevertheless, is a phase in the temporal process of the subject's existence, and the verb refers to it not as conceived in isolation, and without reference to the subject's acquiring the attribute-elements in time, but as a phase in a process sustained by the subject, and therefore as so sustained itself. The difference here intended between the isolated phase, not expressed by a verb, and the phase as belonging to a process sustained by the subject may be illustrated as follows. A substance may be changing colour. Suppose at some moment it becomes red. The attachment of the red colour to it, in abstraction from the process the subject is sustaining, is expressed by

help of the adjective red and so we can say of it that it is red at a given moment. On the other hand, for the subject's having the attribute, as a phase in a process which the subject sustains, we have the verb-form ' to redden ', as when we say, he reddened with anger.

§ 77. We come now to the verb ' to be '.[a] The adjectives corresponding to the three kinds of attributes which we have distinguished from those implied by verbs, are, in order to express the assertion that the subject of them is what the nominative case denotes, connected verbally with that nominative case by the verb ' to be ' in the indicative mood. But this verb must not on that account be confused with a mere mark of connexion. It is not a mere ' copula ', but it represents the general form of what we may perhaps conveniently call ' attributive being ' The attributes, as we have seen, are particular forms of the being of the substance or subject in general, and the verb ' to be ', in its ordinary and normal construction, always stands for the generic form of this attributive being. Thus it is only to be used along with an expression of how it is differentiated in the particular case, that is, what specific form it takes. Thus, in normal usage, it never expresses or asserts the mere existence of the subject. That is why we feel an artificiality about such a sentence as ' crocodiles are '. The words ' is ' or ' are ' should never stand alone, but should be followed by the expression of the particular kind of attributive being intended. Accordingly, in ordinary speech, if we hear some one making a statement with the verb ' is ', we expect him to go on and not to end with the verb. The mere existence should be expressed by a verb like ' exist ', as ' crocodiles exist '. Really, to say ' crocodiles are ' is a mistake parallel to saying ' crocodiles exist reptiles '. In fact, the being represented by the verb ' to be ' is not mere existence but ' being so and so '.[1] The verb ' to

[1] This is recognized by Aristotle in so far as he says that *εἶναι* in general *προσσημαίνει σύνθεσίν τινα*. *De Int* 16[b] 24 [§ 76, note a] But he is not engaged in eludicating this meaning of *εἶναι*, and what he says is merely incidental to his maintaining the doctrine that single words do not, taken by themselves, mean that anything exists Elsewhere he usually distinguishes between *εἶναι*

[a] There are, of course, even in English many other verbs which act as copulas, e g ' turn ', ' become ', ' seem ', ' look '. Sweet, op. cit., § 263. In Hebrew, the grammarians say that there is no true copula]

be' has its tenses and refers to the being of the subject as in time and as having the aforesaid different attributive forms in time. But, as we have seen, the attributes with which it is used are those which are considered either as not processes in time nor phases of such process, or else phases of process as abstracted from the process, that is, abstracted from their *happening*.

In the case of the present tense of the verb 'to be', there is an extended use beyond the strict momentary meaning of the present. This happens when it is used of those attributes which (whether rightly or not, doesn't matter for our present purpose) are supposed to belong to that being of the thing which is identical in the various times of its existence. It is true that such attributes would exist at any moment which may be present; but, nevertheless, the fact is that, when we speak of those supposed constituents of the identical being of the subject and say of this subject that it *is* so and so (more especially when we are defining it), we don't really confine this 'present tense' to the actual 'now', and we most certainly do not merely mean that those attributes exist now; we are indeed referring to their existence as identical in the various 'nows'. Nor, on the other hand, do we at all naturally or normally look on their existence as really something maintained in time; that is as really a process, such as has already been referred to, wherein each temporal phase is like any other, a succession of homogeneous events. We mean something that does not happen at all; we are referring to its existence as identical in various times, and the 'is' does not refer to any of the different momentary 'nows'. The same consideration applies to other attributes conceived not as momentary but as identical in various times, whether parts of the permanent being of their subject or not. We shall return to this matter under the head of Modality.[1] It is by the assertoric inflexion of the verb 'to be', by its indicative mood, combined with the nominative and the adjective, that the assertion of the particular being of the subject is represented in language.

ἁπλῶς (to be without qualification) which is existence (properly) of a substance and εἶναί τι (to be in a particular way) The latter is really the proper formula for the *whole* use of εἶναι, and in general the 'absolute' use is as artificial in Greek as it is in English.

[1] § 93.

So far we have been trying to describe the facts; we have now to look for their explanation. We are so accustomed to the attachment of the assertive symbolism to the verb, that we may not at first realize how striking it is; but we become aware of this as soon as the idea of explaining the fact occurs to us, for the question proves no easy one. It is necessary to attempt first, as has just been done, an analysis of the objective reference of the verb-form, in order to see, if possible, whether it contains any probable ground for the combination with it of the assertive function. Perhaps the true reason lies hidden in some primitive stage of the development of language, but it may depend on general principles discernible in the nature of language as such, and, if so, the following explanation may be suggested.

We naturally look to what may be common to all verbs, but we have seen that the verb 'to be' differs so much from all other verbs that it stands in a class by itself, which threatens to make the inquiry harder. An obvious characteristic of all verbs is the indication of time; yet it is not easy to see how this could be any reason for adding the assertive function, and, as we shall notice presently, the indication of time by tense is not confined to the strict verb form. Again, in the case of the verb 'to be', we have observed that special use of the present tense, which in a way seems to abstract the distinction of past, present and future altogether.[a]

Let us begin with what seems likely to be the most difficult case, that of the verb 'to be', for the more difficult case often brings the essential to light. Perhaps the clue may be this. An assertion corresponds to a doubt or a question; if there were neither of these, there would be no need for an assertion. It seems therefore reasonable to expect that, if there be a word-form in the sentence which represents the part which is really open to doubt, it would be to this form that the mark of assertion would be attached. In a sentence of the form 'all lead is heavy', or 'lead is heavy', there is, in ordinary cases, no doubt of the existence of the object denoted by the nominative, nor of the kind of attribute which the adjective indicates—heaviness. For, observe, it is the universal, as heaviness in general,

[a Sweet (§ 289) calls this the neutral present. He compares the neutral gnomic perfect in Latin.]

which the adjective taken alone implies, and not the special heaviness of a given substance. The existence then of neither of these need be asserted, and accordingly we should not expect the assertive mark to be attached to them. What *is* doubtful, or matter of question, is the relation between the subject and the attribute—i.e. whether the subject has or has not the attribute-element. This is always so, whether the object denoted by the nominative, or the attribute implied by the adjective, is the logical subject, and in either case the original and normal tendency of language is to use the same grammatical form.

Now the word in the sentence which corresponds to this relation (the relation the existence of which is a matter of doubt) is the verb 'to be'. For that of which the existence would be doubtful in the given example would be not lead nor heaviness but lead's relation to the attribute of heaviness, that is, lead's having the form of being which is heaviness; or, more precisely, that its 'attributive being', its 'being somewhat' should have this form It is the verb 'to be', then, as properly meaning not 'to exist' but 'to be something', which, when combined with the nominative case, corresponds, in the manner explained, not to the subject nor to the attribute, but to the subject's being subject of the attribute. The verb serves as a copula, with the qualification already given, because it does refer, not to mere being or existence, but to this attributive being, thus in itself involving the connexion.

This verb then corresponds to the relation, a doubt or question about which is presupposed in making the assertion, and thus it is the word to which the symbol of assertion might naturally be attached. This has nothing to do with the time indication common to all verbs. We shall find that the same principle of explanation would suit other verbs also, and depends on a feature which they have in common with the verb 'to be'. Where this verb is used in combination with the adjective, the attribute and its relation to the being of the subject are indicated by two different words, the adjective and the verb 'to be', and it is to the word which refers to the 'belonging to the subject', we may repeat, that the assertive symbolism is given. If, then, a word combined both these references within itself, it would

be the one to which upon the same principle the symbol of assertion would naturally be attached.

Now, it is characteristic of these other verbs, active, passive and deponent, that they do combine the reference to a certain kind of attribute-element with the reference to its being an attribute of the subject which the nominative case denotes. This is obvious when the verb stands alone after its nominative and is what we called in a special sense an attributive verb; the grammatical form is then what is called deponent or neuter. For example 'he stops short', 'he walks'.

But this holds also of the relational verbs which do not stand alone; of active verbs followed by an object, and of passive verbs, where the noun denoting the active cause is expressed or implied. It holds also of verbs in general which are parts of the expression of a relation. They are always the only words in the sentence which refer to the possession of an attribute-element (taking this word in its widest sense in which it includes relation) by its subject. This possession being the doubtful or questioned part, and the reference to it characteristic of every verb, the mark of assertion would naturally belong to the verb. If this is so, the reason of the assertoric function of the verb would lie in only one of the characteristics which have been enumerated above, and would have nothing to do, for instance, with the temporal process as such, conceived actively or passively. The temporal reference indeed is not confined to the inflexions of the verb proper,[a] it is found in the adjectival form, for the participle is simply an adjective with tenses. There seems no reason why every adjective should not have a tense-inflexion, on the other hand, there is an obvious economy in the actual plan which the development of speech has followed, confining in general the tense inflexions to the one word-form in the sentence, the verb in fact which is used to express the connexion of the attribute-element, to which the adjective relates, with its subject. If the principle had been to express the time in which an attribute exists or existed by a tense inflexion in the adjective, the ordinary verb would still have

[a Both noun and adjective verbals keep the distinctions of tense and voice in English, 'I hope you are coming', 'I expect you to have finished', 'I remember having seen him', 'I heard the dog being called'.]

had the tense inflexion in virtue of what it has in common with the ordinary adjective.

There is an idiomatic use of the present tense which must not be confused with the idiom of the present in the verb 'to be'.[1] When we say 'John plays the violin', we do not mean that he is playing now, nor do we mean a playing which, like the player, remains identical in various times. It is our idiomatic way of expressing the fact that a given kind of temporal attribute, whether process or event, is found normally in the subject, without specifying the time of its existence in that subject. This again implies the capacity for such temporal existence in the subject. Now that is something which is identical in various times, itself neither process nor event. Often it is this capacity which is mainly in view, and accordingly the use of the verb 'to be' in the present is not only possible but seems more accurate. Thus we say 'John is a runner' or 'John is an angler' instead of 'John runs' or 'John fishes'. Sometimes, again, the main intention is to describe a quality which the attribute-element has when it appears in a given subject, without reference to the time. Then the present tense is used with the adverb to express this quality, e.g. 'John runs well', and here again the more accurate form seems to be 'John is a good runner', or 'John's running is good'. On the other hand, the 'tenseless' use of the present may be found in any verb when its nominative denotes something conceived as having the 'timeless' kind of being which we shall discuss later.[2]

With reference to the attributive meaning assigned to the verb 'to be', there are three points which may be noticed. The common idiom for expressing mere existence by help of the verb 'to be', is really an illustration of this attributive meaning. When we say 'there are such things as crocodiles'[a] it is just because 'are' does not stand by itself for mere existence, that in this idiom it is not used by itself but combined with the adverb of place 'there', and by a kind of circumlocution, merely to exist is expressed by 'to be in some place or other'. Being here or there is really 'attributive being' of the subject. We

[1] pp 182–3 [2] § 93.

[a] Cf. *Sunt aliquid manes.*]

have an apt illustration in the German word for existence which is *dasein* (being there). Secondly, the verb 'to be' is sometimes followed by an expression (a general noun) which covers the whole being of the nominative as a subject of attributes (what Aristotle calls 'kind' and 'species') and so goes beyond the partial being constituted by a limited number of attributes expressed by the help of adjectives (e.g. 'that is a horse'). But this, again, is no exception to what has been said, for here 'to be' does not stand for mere existence, but for an existence to be defined by the attributes expressed and implied in the general noun, so that it means to be somewhat. Indeed (the verb 'is' not referring to the mere fact that what the nominative case denotes exists, but to the whole kind of existence which it has), in this particular case we express what this existence is by identifying the subject of attributes denoted by the nominative with a subject of the kind referred to by the attributive. This particular form may be conveniently called 'identifying statement',[a] its extreme use being where the attributive is individual.

This subject will be returned to in a subsequent discussion of the question whether the verb 'to be' always expresses identity.[1]

Lastly, a similar account holds of the attributive use of the verb 'to be', when the general noun following does not refer to the whole being of the subject. It holds too of the case where the noun following 'is' is the name of an individual, for in this case also the verb 'to be' does not stand for mere existence.[2]

§ 78. Hitherto the subjects, the attributes[3] (whether represented by nouns or not), and the relations which we have examined were all particular. We have now to consider universals.

The earlier stage of language is able to do without the names

[1] §§ 86, 87 [2] § 79.

[3] To avoid misunderstanding, observe that when we say of an attribute-element, motion, that it has velocity we cannot mean the universal by 'motion', for the universal has no velocity, but only a particular motion has it. And even when we say 'motion is either uniform or irregular', where 'motion' seems universal, we can only mean that particular motions are regular or irregular, though, as will be explained in the sequel, we do thus express a universal statement

[a 'The extreme case of identification is that where the attribute is individual'.—MS. note Cf. pp. 194, 208, and 349.]

of universals, that is without nouns which mean universals. And it is worthy of remark that even the most developed stage of language both of ordinary life and of science does not evolve names for universals of substances or individual things. Such a word as 'horseness' or 'animalness' appears only in the artificial language of philosophical investigations. In ordinary speech we should use a circumlocution such as 'being a horse' or 'being a horse in general'. But the simpler language can dispense with universal names There, though the universal proposition expresses a connexion of universals (as even Locke saw), this is by various devices expressed in grammatical forms which belong to particulars.

The most definite and adequate method is to take for the nominative the plural of a particular noun preceded by such a word as 'all': 'all crabs walk sideways', 'all equiangular triangles are equilateral'. The grammatical form is that which attaches a particular case of the attributive to each of the total of particulars of the universal signified by the nominative phrase.

Next the qualifying words, such as 'each', 'all', may be omitted and the indefinite plural used.—'crabs walk sideways', 'equiangular triangles are equilateral'. The meaning of the grammatical form is the same as before.

Again the singular, with the word 'any' or 'every', or the singular indefinite (as in English with the indefinite article) may be used 'a crab walks sideways', 'every circle has uniform curvature'.

These are methods of general application. There are others which are not. The definite article may be used with the singular of the particular noun. 'the crab walks sideways', 'the circle meets its tangent in one point only', 'the vulture is carnivorous'; but we shouldn't say. 'the man is carnivorous', 'the man is mortal'. An interesting idiom is illustrated in: 'lead is heavy', 'man is mortal', 'man is endowed with speech'. But we shouldn't say· 'crab walks sideways', or 'man is endowed with speech but fish is speechless', though we should say: 'fish, when not fresh, is poisonous'. Since 'lead' is a word applied to every piece of lead, the particular being denoted by phrases like 'this piece of lead' (and similarly for 'man'), it might perhaps be thought that the words 'lead'

and 'man' actually denote universals. But this is disproved by the verbal or grammatical form. For the grammatical form is that which attributes something to an individual subject and we cannot in the sentence substitute nouns which clearly mean universals for lead and man. We cannot say 'manness is mortal', it is only the individual man who is mortal; nor can we say 'manness is endowed with speech', or 'leadness is heavy'. The true account seems to be that lead is a sort of collective and represents, so to say, the whole stock of lead.

But when those nouns appear which are the names of universals, whether substances or attributes or relations, can they be treated grammatically like the nouns which represent or are names of particulars?

A particular substance uniting elements in itself, such as weight and a certain shape, has these attached to it in the sentence by the corresponding adjective, e g. 'it is heavy', 'it is round'. Similarly for an attribute, to express the fact that a movement has swiftness and straight direction we say 'this movement is swift and rectilinear'. To these attributes correspond universals, and so we may say that the universal of the given movement involves in itself the universals of swiftness and rectilinearity and that it is inseparable from them. The universal itself is 'swift rectilinear motion'.

Now, though a particular has certain particular elements, the universal of that particular has not necessarily the universals of those elements as elements of itself. Thus the *universal* 'swiftness' cannot be an element of swift, rectilinear motion; for, if it were, its being would be comprised entirely in the being of 'swift rectilinear motion', and then a swift motion would be necessarily rectilinear. Similarly for rectilinearity. Thus, though the universal 'swift rectilinear motion' appears as one, and as a complex involving the universals of swiftness and rectilinearity, it is not a complex of which these universals are elements or members. Nor is swiftness an element of the universal 'motion', for then all motions would have to be swift. The universal of an emerald, to take a substance, is of something transparent, green, heavy, and of a certain shape. As before, transparency, greenness, weight cannot be regarded as elements of the universal 'emeraldness'. Thus, if a particular

is a unity of elements or attributes, the universal of that particular is not necessarily a universal of which the universals of the given attributes are elements or attributes.

These objections do not apply to such a relation as that of velocity to movement in general. The being of velocity is comprised in that of movement, and movement cannot be without velocity. The universal of velocity may be said then to belong to the universal of movement. So also the being of volume and surface is comprised in that of body, and the actual being of body must always be accompanied by surface and volume. Suppose then we allow them to be elements in the universals of movement and body respectively, as universals which belong to those universals. Whether the universals which a given universal involves can be said to be elements in the latter or not, the noun which is the name of the given universal cannot appear as the nominative to the verb which corresponds to one of those other universals, nor as nominative to the verb 'to be' with the adjectives corresponding to the other universals, nor can we employ the circumlocution with 'have'. Thus the analogy of the case where we are sure that the elements are elements in the particular thing cannot be followed here. For instance we cannot say 'starness twinkles', but only 'a particular star twinkles'. Or, to take a universal which might be considered an element in another (sentiency in animalness, rationality in manness), we cannot say 'animalness is sentient', but only 'a particular animal is sentient'. We cannot say 'bodiness is heavy' or 'bodiness is extended', for only a particular body is heavy. We cannot say 'bodiness has surface', nor 'motion in general has velocity'. The ordinary adjectives and verbs then will not do, and there is no special set of verbs or adjectives analogous to the ordinary ones to express the connexion of such a universal as velocity with such a one as motion. Even when we say 'velocity is an attribute of motion', we mean that a particular movement has velocity (a particular velocity) as attribute, and not that the universal of motion has.

Nevertheless we are not at a loss to express the true relation of universals. We can use the grammatical forms for particulars with the devices already explained, e g. 'a movement must have

velocity', and 'a velocity must be the velocity of a movement'. At first sight it may seem an imperfection of language that a universal fact should be expressed by a statement which refers to a totality of particulars, but, as will appear later on,[1] this usage of language corresponds to an important truth. The present discussion may serve to bring out the fact, which is sometimes forgotten, that the grammatical forms of our existing language are the expression of particulars; not, however, of mere particulars (there is no such thing), but of particulars of universals. It is this which makes it fallacious to use ordinary grammatical forms unguardedly for universals *qua* universals, that is for universals when expressly stated in the form of universal nouns proper.

[1] § 82 ad fin., cf § 71

IX

THE SYMBOLIZATION OF FORMS OF STATEMENT

79.[a] From the discussion of these grammatical and metaphysical distinctions we return to the problem of the adequate symbolization of the general relation which the statement denotes, the relation usually represented by all (some, this) S is P; and first we will raise the question how the parts of the sentence so symbolized should be named so as to avoid confusing the objective relation, represented by the distinction of the nominative case from the verb and what accompanies the verb, with the relation of subject and predicate? We were led to believe that we cannot retain the ordinary analysis of the sentence into grammatical subject and grammatical predicate, for that seemed inconsistent with any usual or legitimate interpretation of those terms.

The nominative case does not always coincide with the logical subject, on the other hand it hardly seems correct to call it the grammatical subject. If there were a special sort of subject called the grammatical subject, there should be a special kind of predicate called the grammatical predicate; but this is not so. Grammarians borrow the term predicate from logic uncritically and without any intention of giving it a meaning other than it has in logic; accordingly they make no special definition of a grammatical predicate If then there is no special grammatical predicate, we are not entitled to speak of a grammatical subject. What would be intended by such a phrase is that for which the proper grammatical term is 'nominative to the verb' in a principal sentence, and its grammatical equivalent (for instance the accusative with the infinitive, in Latin and Greek) in dependent sentences.

Now in the case both of those kinds of statement the verb in which is an attributive or relational verb, 'he walks about',

[a 'Reconsider use of term metaphysical subject in all that follows.'—MS. note]

'he watereth the hills', and of those where the verb is the verb 'to be', followed by an adjective or adjectival phrase like 'he is troubled' (and not by a noun or noun-phrase), what is ordinarily treated as the distinction of subject and predicate is just the objective distinction between the object denoted by the nominative case and its attributes or relations.[a] We may, as we saw, include relation under attribute, in a wider sense of the latter term, and then the general distinction is that of subject and attribute. Instead therefore of the misleading term predicate, it would be better in the sentences in question to use the term 'attributive' for that part of the sentence which corresponds to the attribute or relation which the nominative to the verb is said to have, what has been called above its 'attributive being'.

The same nomenclature may be applied to those other kinds of statement in which the verb 'to be' is followed by a noun, whether a common noun or a proper name; for instance, this box is a cube, Socrates is a man, the person approaching is Socrates. It is true that in neither case is the relation of that which is denoted by the nominative case to that to which the noun refers that of subject to attribute, but, in the case of a common noun, this noun, though not referring merely to attributes but to a subject as possessing attributes (whether a part of these, e.g 'a cube', or indicating somehow the whole of them, e.g an animal), only serves to convey information about what the nominative case[b] represents through the assignment to it of these attributes. The use then of the common noun is attributive. Its affinity to the adjective appears in the fact that in a certain form of sentence it cannot become the nominative to the verb.[b] It cannot, with the significance it has in the sentence where it is not the nominative, stand itself in the nominative case to the verb 'to be' followed by a common noun, or by a verb or adjective which assigns a permanent characteristic as opposed to denoting an event. We can say 'a whale is a mammal', but not 'a mammal is a whale', for

[a Cf Lotze, *Logic*, i 2, § 53

b 'nominative to the verb', 'nominative case' As there is no special nominative inflexion of nouns in English, this term seems inappropriate We could only say that in such a sentence as 'a whale is a mammal', 'whale' is in a nominatival relation to the sentence]

the latter expression, according to grammatical rule, if it meant anything, should mean that every mammal is a whale. When the common noun 'a mammal' is really a nominative in such a sentence, it stands for 'any mammal', and it does not stand for this when in the 'attributive' of a statement.

The case is different in the remaining class of statements, where a proper name is joined to the nominative by the verb 'to be', as in 'the person approaching is Socrates'. The proper name denotes a particular subject and therefore can be a nominative in any form of sentence. But nevertheless the proper name in such a sentence is not of use as designating a subject, for that is already implied in the noun itself which is the nominative; its use, as serving to give an account of the subject, lies in the attribute it implies. In this case then also we seem justified in calling the part of the sentence consisting of the verb 'to be' and the proper name, the 'attributive' part.

The general account then of all the affirmative forms with the verb 'to be' is this: every such sentence affirms that what the nominative denotes has a certain kind of being, which is either part of its being (when the attributive has after the verb the adjectival form and sometimes when it has the noun form), or else includes its complete being.

The function of these affirmative forms is quite independent of the question whether the nominative case is the logical subject or not, and holds when the nominative is not the logical subject. Thus if, seeking information about elasticity, we ask in what substances elasticity is found, an answer to the question may properly have the form '*Glass* is elastic'. This, though we did not ask for information about the nature of glass, is the verbal form of the description of a part of the nature of glass. Now we often speak of a thing on which an operation of any kind is performed as the 'subject' of the operation. In this way it is natural to call anything about which a statement is made the subject of that statement. We may therefore define as 'subject of statement',[a] with reference to a given statement,

[a Cf 'In gold is yellow, the grammatical subject is the *word* gold, the subject in the judgement, the logical subject, is not the idea of gold, but gold' Lotze, *Logic*, 1 2, § 37]

anything which has something said about it in the statement, considered as such. And what is said about it is precisely the whole statement. The definition of the logical subject which we have criticized, namely (in effect) that it is that about which we make a statement or of which we say something, was too wide for the logical subject, though it involved as we saw a legitimate notion. We see now that, as every element in a statement has something stated about it, we can't speak of *the* subject of the statement in this sense. The statement, for example, 'A causes B' is a statement about both A and B. By *a* subject (not *the* subject) of statement then we do not necessarily mean the nominative to the verb, much less the true logical subject. Nor is a subject of statement necessarily that subject which is represented in the statement as the principal subject of attributes, that namely which we have called the metaphysical subject.[1] As this latter subject is correlative to the attributes which the sentence states it to have, we may conveniently call it 'the subject of attribution', just as we have called the remainder of the statement the 'attributive' of a statement. We see then why the tendency of language on the whole is to make the *logical* subject coincide with the nominative to the verb. It is because the function of the verb or verb-form is to describe the nature of what is denoted by the nominative case.

It is evident that while the nominative case does not necessarily express the logical subject, it does express a metaphysical subject, that is a metaphysical subject in the widest sense as a subject of attributes, and not merely in the narrower sense of substance. We may even say that it expresses the 'subject of attribution' of the statement, if we understand by this that subject of attributes, which is directly represented as being such in the statement. As we have seen, every element of reality referred to in the statement may be a metaphysical subject, and that any such element is so may be implied in so far as what is attribute of it appears in the statement (for an attribute may appear as attribute and so in adjectival form in a statement, and that it has itself an attribute may be indicated by an adverb). Nevertheless it is not represented as a metaphysical

[1] pp 158, 166, 168

subject in the sentence or it would have the noun form. Further, a noun which is not nominative to the principal verb may have an adjective attached to it, and the form of the sentence may be such as to imply that an object referred to by the noun really has the attribute corresponding to the adjective, as in the sentence: 'we have a mortal body.' But this is only indirectly and by implication. The verb being the assertoric word, it is only the nominative to the verb which is directly asserted to be the subject of attribution and only the nominative therefore which is directly represented as being such a subject.[1]

Lastly, we may observe that it is the tendency of the earlier forms of language and of the simpler form at all times to restrict the subject of attribution to 'substance'.[2] This appears to be the reason why the logical subject does not always coincide with the nominative or subject of attribution. It is really the relation of subject and attribute, in the wider sense of attribute, which determines the grammatical forms of the sentence: the relation of subject and predicate only determines a certain stress-accent.[3]

§ 80. Every statement must have a subject or subjects of attributes, but there seem to be cases where logical subject and predicate may be absent.[4] In a statement which is the statement of an experience the elements in the object to which the statement relates may be apprehended simultaneously, as where, in experiencing the shape and colour of an object, we cannot fairly say that we apprehend the one before the other. The same thing may happen in an apprehending or thinking which is not experiencing. In a given case indeed we may have been thinking somehow beforehand of the general character of one of these elements and have been seeking for further knowledge about it. I may see that a crystal is of a green colour and may not be able to distinguish in time my appreciation of its shape and my appreciation of its colour; but I may have been thinking already of crystals and be seeking information about them, and so far crystal might be called the logical subject. This however suggests the possibility of a kind of simultaneity where we could not make the above distinction, where it could be said that we had not been thinking of either element

[1] See note at end of this chapter, p 211.
[2] §§ 57–8.
[3] § 75
[4] § 94.

of a whole beforehand. If so the statement which expresses the apprehension as it was for us could not properly be said to have a logical subject and predicate. We shall find that this is not a mere surmise, and later we shall have to recognize the existence of such rudimentary statements.

In the communication of our knowledge, what we put first in a sentence is generally the logical subject for the listener, apart from any context which may have determined it otherwise, and so what is the subject for the speaker may well not be the subject for the listener This may serve to remind us that in logical investigations we do not perhaps take enough account of the obvious fact that our apprehensions constantly do not issue in actual statements, and so we fail to recognize that it would often be quite artificial to represent them as involving a statement to ourselves. When we do come to make them matters of statement, the distinction of subject and predicate indicated by the stress may correspond not to the actual order of our apprehensions but to some interest which has intervened.

§ 81. We are now in a position to consider the grammatical form of the special kind of sentence which is usually symbolized by A is B, or all (some, this) A is B, the more modern form being S is P, or all (some, this) S is P.

The reduction of all statements to this form is, as we have seen, of the greatest importance to the traditional logic, which makes the analysis of sentences into subject and predicate depend entirely upon it, and for the purposes of the syllogism assumes that every proposition can be reduced to the given form The reduction is quite independent of the question whether B is to be called the predicate, and A, or all A, the subject in this formulation In itself, it merely means that every statement can be put into a grammatical shape in which the principal verb is the verb 'to be' in the indicative mood, the nominative case being represented in the symbolism by A, or all A, and everything indifferently which follows the verb, that accordingly which expresses what the object denoted by the nominative case is said to be, being represented by the single symbol B.

Now this suggests two questions: How do we know that the

form is thus universally applicable? and, what is the value of it? We find on trial that we can put any given statement into this form, but that does not guarantee that it will suit statements we have not tried; some general proof is therefore requisite. On the other hand the operation is sometimes difficult enough and the result often seems unnatural and strikes us as awkward and artificial. We want therefore some proof that it really is always applicable and some justification for it. If the inquiry had been undertaken by the ordinary old-fashioned logic, a mistake sometimes found in it about the copula might have been avoided. We shall discuss this mistake later

It has been contended above that the modern use of the symbols S and P so far from being an improvement introduces an error; the old symbolism, due to Aristotle, is better, but it is imperfect as compared with the precision attained by modern scientific symbolism According to the principles of accurate symbolism the capital letters A and B in 'all A is B', ought to represent the same grammatical forms, but they do not. They stand indifferently for both adjectives or adjective phrases, and nouns or noun phrases Nor is any provision made for the cases where the attribute indicated by the adjective following the verb 'is' does not attach to the subjects of attributes comprised in the nominative case, singly, but only to them as in systematic connexion with one another. This causes a difficulty when these statements have to be put into the orthodox syllogistic forms. There is besides a manifest artificiality in resolving all statements into a type beginning with 'all', 'some', or 'this', for there are classes of statement to which it is quite unsuited, nor would any natural expression of them ever assume this form.

We are obliged then to consider more particularly the different sorts of expression which the rough symbolism 'A is B', or 'all A is B', may cover. We shall, in the end, be led to a single generic form with a twofold distinction like the traditional one, but for this generic form the ordinary symbolism cannot be retained on account of the defects enumerated.

Since in the ordinary symbolism, 'all A is B', B usually stands for an adjective and A often for a noun qualified by an adjective (all horned animals are ruminants), let adjectives be represented

by roman capital letters, taken from the first half of the alphabet. Such a capital letter then will always symbolize an adjective. Let nouns be represented by small italic letters enclosed in brackets, what letters will appear presently. In the case of all general terms their application to a particular will be indicated by a numerical suffix.

Consider first the representation of a substance with its attributes and relations. Let the symbol for a substance in general be (s): then the symbol for a particular substance will be $(s)_1$, $(s)_2$, &c.

Let a small letter, from the first half of the alphabet, in a bracket, such as (a), be the symbol for an element in the being of a substance, something, that is, said to belong to an (s), e.g. the curved surface of a body. There is a corresponding adjective used to indicate that a substance has the element (a). In the example taken this adjective might be 'round' Let the adjective corresponding to (a) be A. Thus we say 'this body has a curved surface', which is of the form $(s)_1$ has (a), and 'this body is round', which is of the form $(s)_1$ is A But now corresponding to 'round' there is another noun, roundness, which does not mean a curved surface, but the possession of a curved surface Thus, in general, beside the noun (a) and the adjective A, there is a noun which may be symbolized by Aness as meaning the possession of (a). Aness then is the name of 'having (a)', and represents a universal The possession of an (a) or the possession of $(a)_1$ by a particular $(s)_1$, is itself particular, and is not Aness but the particular Aness of $(s)_1$. In ordinary language Aness would generally be called an attribute, roundness being said to be an attribute of the round body. If this usage is followed, some word different from 'attribute' must be used for (a). Perhaps 'element' may serve. 'Element' has here the widest sense and is not confined to what is spatially distinguishable. The foregoing distinction exists in the case of every attribute and can be vindicated even where not fully provided for in ordinary language. For instance the movement of a body is an element in its being This corresponds to (a), but there is no word for Aness. Yet the possession of the movement is the true attribute, and not the movement. These must be different because we can say of the one what we cannot say

of the other. For instance the movement may be circular, but we cannot say the body's possession of the movement is circular. This is just like cases where the distinction is more adequately rendered in language. We can say, for instance, the point of a needle is in contact with a plate of metal, but not that its pointedness is so. 'Elasticity' (like 'transparency' and some other words) seems used ambiguously for both element, (*a*), and attribute, Aness. It certainly often means an attribute of the body as a whole and the possession of something by the body as a whole, thus corresponding to the adjective 'elastic'; but this is not so when we speak of the coefficient of a body's elasticity, for the possession of something by a substance cannot have a coefficient. It may be shown that one result of these considerations is that we cannot accurately speak of a substance as the unity of its attributes but only as the unity of its elements.[1]

The symbol (*s*) is general, as applicable to any substance whatever, and the corresponding words are such general terms as 'thing', 'object', 'being'; e.g. a 'white object', a 'rational being'. A substance designated as possessing (*a*), or as having (*a*) for one of its elements, will be represented by (*s*) A. A particular substance $(s)_1$ has no definiteness except through the elements of which it is the unity Hence with the exception of statements about things in general, (*s*) and $(s)_1$ cannot appear except in the combinations (*s*)A, $(s)_1$A, (*s*)AB . . &c, $(s)_1$AB . . &c.

If we wish to express that a substance thus designated has an attribute, this is done by making it the nominative case to the verb 'is' followed by the adjective corresponding to the attribute. Thus the existence of the attribute Bness and the possession of the element (*b*) by $(s)_1$A is expressed by $(s)_1$A is B. The complete being of a substance is the existence of all its elements in their unity, and its possession of any given element, that is the existence of any given attribute, is a part of its existence or form of its being. Aness then is one of the forms which the being of a substance (*s*) takes. Thus then, in the statement $(s)_1$A is B, it is implied on the one hand that Aness is one form of the being of $(s)_1$, and on the other hand it is

[1] This whole subject requires a fuller discussion than the present limits permit.

stated that Bness is another form of the being of the same substance. The verb 'is' refers to the attributive[1] being of $(s)_1$ in general, and one form of this appears in the nominative case to the verb, while another form of it appears in the attributive part of the sentence. Thus the verb 'is' is qualified by the adjective B, just as other verbs are qualified by adverbs.

It must be noticed that we are not here trying to determine what it is that grammatical forms ought to mean, but only to recognize what they do mean. We do not, for instance, profess to settle how the verb 'to be' should be, but how it *is* employed in statements. In its normal use it is not put by itself to express the mere existence of something, but always to express a particular form which such existence takes.[2] It is combined with an adjective or adjectival phrase, or with a noun or noun phrase, to make up the attributive.

The nominative case to the verb may be a plurality of substances of the same kind (s)A, in the form 'all (some, these) (s)A', or several substances not necessarily of the same kind may be associated by conjunctions as $(s)_1$A and $(s)_2$B are C. In these cases the same account is to be given of what is expressed about the being of each such substance in the statement.

A given substance, or a given kind of substance, referred to in a statement will not always be represented by a word which (somehow or other) denotes its whole being, but often by one of those words which distinguish and designate it by some aspect or part of its being. The forms then would be (s)A for a subject in general which has the attribute Aness, and $(s)_1$A for a particular subject which has this attribute. Nothing then more definite is implied about the nature of such a subject than that it is something which has the kind of being, Aness But there are single words which are equivalent to the combination of words (s)A. These are nouns which refer to a substance in general which is subject of a certain attribute and only designated through that attribute, such as 'a solid', 'a fluid', 'an organism', 'a crystal', 'a cube'. These may be conveniently symbolized by the roman capital letter corresponding to the attribute, the letter being enclosed in a bracket. Thus (A) will represent a noun which is equivalent to (s)A, meaning a sub-

[1] § 77. [2] See § 77 init and p 181, foot-note 1.

stance in general distinguished as having the attribute Aness, and $(A)_1$ will represent a particular instance of such a substance; e.g. 'this crystalline substance is cubical' is of the form $(s)_1A$ is B; while 'this crystal is cubical' is of the form $(A)_1$ is B. (A) then can replace (*s*)A either in the nominative or in the attributive part of the sentence; e.g. $(s)_1A$ is (B)—'this crystalline substance is a cube'; $(A)_1$ is (B)—'this crystal is a cube'.

A substance may be designated through more than one attribute so that the general symbols are (*s*)ABC . . is ABC . . . If a substance is to be referred to in its whole being, and not merely as distinguished by certain of its attributes, this is not done by means of a word corresponding to (*s*) followed by some word X somehow indicating the complete series ABC . . . , that is, not by something which would be of the form (*s*)X, but by a single word which is either a proper name or a general (often called a common) noun, such as plant or animal The latter is general as applying to any particular substance of the given kind, but it is not the name of the corresponding universal (that would be a word like plantness) nor is it the name of a particular, for it does not strictly speaking denote any particular It is rather the general form of a name. If these nouns are symbolized by bracketed roman capital letters taken from the second half of the alphabet, as (L), (M), then $(L)_1$ would symbolize a given substance of the kind indicated by (L) that is a particular of (L)ness (e.g. plantness, animalness), the numeral corresponding to some particularizing word such as 'this' The whole nature of a given substance, as a substance, is comprised in (L)ness (e.g. manness) and this gives the distinction between the forms (L), representing say 'man', and (A), which represents say 'cube'; for in the latter case the universal (A)ness only comprises one aspect of the being of the substance, namely, its being a substance which is subject of the attribute Aness.[1] If the fact that a given substance is of the kind (L) is to be expressed, the grammatical form has (L) for the attributive, just like the adjective, except that in some languages it is preceded by the indefinite article, for example, This plant-like thing is an animal

[1] For clearness observe that if A stands for 'cubical', Aness is cubicalness as possession of a certain kind of surface, (A) stands for 'a cube' and (A)ness for 'cubeness' or 'being a cube', viz 'being a substance which possesses the given kind of surface'

or $(s)_1C$ is an (L). We shall return later to the question of how (L) indicates the whole being of the given substance.

How then do these general nouns, more especially when particularized, differ from proper names, which also designate the complete individual? We may incline to think a proper name like John is a mere label, while general nouns like man and plant have somehow a significance of themselves. But no word, obviously, has this character, for the meaning or use of a word is due to convention, and so far all words alike are mere labels. The proper name in the strictest sense is a noun which by convention symbolizes and denotes a particular substance, without including any symbol for the kind to which it belongs. The general noun on the other hand does not symbolize any particular substance, but is used, by convention, in a particular grammatical combination to indicate that what it refers to is a substance, and a substance of a certain kind. The association of a given proper name with a given particular substance, as denoting that substance and distinguishing it from all other substances, and the association of a given general noun (e.g. man) with a given universal of substances (e g. manness), as indicating in the manner described the substances which are its particulars, and distinguishing them from the substances which are particulars of other universals, are equally matters of convention Nevertheless, it might perhaps be urged that the general noun is significant in the sense that it gives information about the objects to which it is applied, while the proper name does not We feel there is something unsound about this, for how could proper names be of any use in speech if they conveyed no information? The mistake may be shown as follows. The objection comes apparently to this, that to say a thing has a certain proper name would give no information except that this name has been conventionally assigned to it; if then we did not know the convention beforehand, the statement would convey no information about the thing named But it is equally true that the statement 'this is a plant' would convey no information whatever if we did not know what the word 'plant' stands for by convention. In the case of both words alike, when we know what they mean, information is conveyed by the use of them in a sentence. 'The person coming is Socrates'

conveys information, and indeed much more information than 'the object approaching is a man'. To distinguish proper names we might use the italic letter *i* in brackets, as $(i)_1$, $(i)_2$, &c., '*i*' standing for individual substance. 'The person approaching is Socrates', then is of the form $(A)_1$ is $(i)_1$; 'the thing coming in sight is a ship' is of the form $(s)_1A$ is (L).

The sentence with 'is' may also state the relation in which one substance stands to another, and the manner in which this is done has already been discussed[1] The relations a thing stands in are parts of its being, and consequently the phrase through which the relation is expressed (connected with the nominative case by the verb 'is', exactly like the adjective) asserts a certain form of the being of the substance denoted by the nominative case A number of substances in relation to one another form a system which is a unity. Let a Greek capital with suffix, Σ_1, stand for an individual substance, represented by $(s)A_1$ or $(A)_1$ or $(L)_1$ or $(i)_1$ Such a system may be symbolized, following a mathematical precedent, by $\phi(\Sigma_1, \Sigma_2, \Sigma_3 \ldots$ &c) The system has attributes which belong to it as a unity and a whole, and do not belong to the individual members of the system by themselves Accordingly the manner of expressing the possession of the attributes by the one system may take the forms described for substances Thus they fall under the usual formula 'all A is B', and under the more detailed substitutes for this which have been given above.

There is, however, another case, concerned with a system or group of related individuals, which does not fall under the formula 'all A is B'; one for which the traditional method has made no provision Nor is it covered by the other formulae proposed. When a number of individuals form a group or system in consequence of their relations to one another, it may be that each stands to the rest in the same kind of relation. This is expressed by associating nouns in the nominative case, which denote the members of the system, by conjunctions or some other grammatical device, making them nominative to the verb 'to be', and adding in the attributive part of the sentence an adjective or adjectival phrase corresponding to the given relation, for instance, 'X and Y are equal', 'X and

[1] § 74

Y are compatible'; 'things equal to the same thing are equal to one another'. The adjective refers to something which belongs indeed to each of the subjects denoted by the associated nominatives, yet only in relation to the others. Now in the ordinary formula 'all A is B', the adjective or noun denoted by B belongs to each A separately, independently of any relation it may have to the rest, so that of each A we can say it is B, and the sentence is equivalent to 'each of the A's is B'. But the adjective which forms part of the attributive in the case before us is not of any kind which B can represent, since it does not apply to each of the associated nominatives by itself but only as in relation to the others Consequently also, such a sentence cannot be reduced to a form in which the adjective is attached to each member of the set singly. We cannot say in the above instances 'X is equal', or 'X is compatible', or 'each of these things equal to the same thing is equal to one another'. It is obvious therefore that these cases are quite unprovided for in the traditional form 'all A is B', which is given as the general form of all propositions with the verb 'to be' On the other hand, the fact they express must be put into language quite different grammatically if the 'all A is B' form is to be possible How this can be done will be considered later.

As already explained,[1] when either elements or attributes come to have names denoting them, as uniting elements within themselves, these also enter into the same linguistic forms as substances and attributes Thus a movement unites in itself velocity and direction For the velocity there are adjectives such as 'swift', corresponding to A, and the attributive noun swiftness, corresponding to Aness; for the direction, such adjectives as 'straight' or 'circular'. It must be remembered that it is as a particular movement that the noun for it can have these adjectives attaching to it.[2]

It remains to symbolize the analysis of the sentence into the subject of attribution and the attributive To avoid confusion with the symbolism above used for the grammatical distinctions letters from another alphabet may be used, say Gothic, and the sentence with the verb 'to be' may be represented by S is a.

[1] § 75

[2] p 187, note 3, and § 82

This symbolism might perhaps be called logical as opposed to grammatical.

It will be more scientific however to write **Sa** for the statement in general, because this would cover the forms in which the verb is not the verb 'to be'. Thus 'John runs' might be symbolized by $S_1\ a_1$, and 'John fishes' by $S_2\ a_2$, and 'John is a good runner' by $S_3\ a_3$

But to show the argument in the syllogism we must have the accurate symbolism of the grammatical forms, and either, as in the ordinary analysis, introduce the words 'all', 'this', &c., or allow (s)A to stand for 'all (s)A' or 'any (s)A', and $(s)_1$A, &c, to stand for 'this (s)A'. In either case the verb 'to be' should be kept for the purposes of the syllogism.

§ 82. The above symbolic formulation belongs to cases where what is represented as a subject of attributes (and, as such, is denoted by the nominative to the verb) is particular, whether subject or attribute This, as we have seen, is the general and normal type in ordinary language, and even universal propositions are normally expressed in this form. It remains to consider the less frequent cases where the nominative to the verb is an abstract noun, like triangularity, covetousness, humility, and therefore apparently not a particular but a universal. What is the meaning of the forms in which an abstract noun is nominative to the verb, and to the verb 'to be' in particular, and can any statement about the universals which they denote be always put in this form? Here we must remember that abstract nouns are not confined to the names of attributes, though it is true that abstract general nouns covering the whole nature of a particular substance are rare and hardly to be found except as artificial and technical expressions in philosophic or scientific language

First we must distinguish a class of cases in which, according to an idiom of language, the nominative, though the name of a universal, is nevertheless not the true subject of the attribute corresponding to the adjective, so that the adjective does not properly attach to the nominative case. In statements like 'covetousness is blameworthy', we do not blame the universal; we blame the individual persons who are covetous because of their covetousness. The adjective or adjectival phrase then

which follows ' is ' does not apply to the universal of the attribute denoted by the abstract noun, but to the particulars which possess the attribute. The abstract noun is not used in its strict sense and there is a kind of brachylogy. Again the particulars referred to may be the true particulars of the attribute-universal, that is particular instances of the attribute. Thus we may say ' covetousness is a disgrace to a man ' or ' covetousness disgraces a man ', meaning not that the universal ' covetousness ' is disgraceful, but that the particular covetousness of any covetous man is a disgrace to him Once more the adjective does not attach to the nominative ' covetousness '. This is the ordinary use of abstract nouns in normal and unartificial language and the employment of the adjective, which properly belongs to the particular, shows how the tendency of language to express everything in terms of particulars maintains itself even here.

The same kind of thing happens even when we have to state the differentiation of a universal into its species. This again is not usually done by means of an abstract noun denoting the genus, but very commonly by words denoting the corresponding particulars, as ' triangles are either equilateral, isosceles or scalene '. But, when the abstract noun is used, the adjective is still the adjective which properly belongs to the particular, as in the sentence, ' movement is either rectilinear or curvilinear '. The nominative is ostensibly the name of the universal, but movement in general does not move nor has it any direction; only particulars can move in a direction, and the more accurate expression of our thought would therefore be ' every particular movement is either rectilinear or curvilinear '. In the rarer cases, where the abstract noun is used in its true significance and is the true nominative to the verb ' is ' in affirmative statement, the attributive part of the sentence following ' is ' most usually has the noun form, and not the adjectival form, and consequently an identity of being is expressed; for instance, ' circularity is a species of conicsectionness '; ' covetousness is a form of selfishness ' This is natural, for even if universals are allowed to have universals as elements there are no adjectives or (attributive) verbs to express this, and so to follow in the sentence the analogy of adjectives and verbs denoting elements in particulars.

Can however the relational forms of expression with 'is' and 'are' be used for the relations between universals, the universals being represented by abstract nouns, on the analogy of the corresponding sentences which state the relations between substances? The usual and natural way of expressing what are commonly called relations between universals is by statements about their particulars; e g an equilateral triangle must be equiangular. This may be put artificially in the form 'equilateral-triangleness necessitates equiangular-triangleness'. Such expressions however are inadequate to what is intended, and for accuracy we should rather say 'equilateral-triangleness necessitates in its particulars equiangular-triangleness' or, again, 'equilateral-triangleness excludes rightangled-triangleness from its particulars', or again, 'isosceles-triangleness is in its particulars compatible with rightangled-triangleness'. The accurate form requires always the reference to the particulars.

Now the relation of a universal U_1 to another U_2 belongs to the being of U_1 This being so, on the analogy of the treatment of relations between particulars, an adjectival phrase expressing the possession of this relation may be used after the verb 'is', the universal U_1 being the nominative to the verb. These adjectival phrases are sometimes very artificial and awkward, as e.g if we substitute in one of the above sentences 'is necessitating', or 'is a necessitator of . . .' for 'necessitates'. But these forms are comparatively rare, as we said, in scientific as in ordinary language, the relations between universals are normally expressed by means of statements about their particulars. This is even true of 'identifying' statements, such as the identification of a universal with a species of another.[1] For instance, it is natural to say 'the circle is a species of conic section', or 'the circle is a conic section', and not natural to say 'circularity is a species of conic-sectionness'.

In fact ordinary language reflects faithfully a true metaphysic of universals. Its forms testify everywhere to the inseparableness of the universal from its particulars, and to the impossibility of knowing or expressing anything about the nature of a universal apart from its particulars. The reason is that the universal has no reality except as a universal of particulars. A misunder-

[1] § 77 (at end).

standing of linguistic facts has produced a number of puzzles about the universal, which, mistaken for metaphysics, are nothing but verbal fallacies. It is characteristic of them to employ, in regard to the abstract universal, linguistic forms which are only proper for the particular [1]

§ 83. It is now possible to see that every affirmative statement can be resolved into the verbal form usually represented by all (some, this) A is B. In this form the symbol B represents the adjective, or common noun, corresponding to B and (L) in the symbolism suggested above. The question really is whether an equivalent, having for principal verb the present indicative of the verb 'to be', can always be found for a statement in which the principal verb is not the verb 'to be'

These other verbs have been divided into 'attributive' and 'relational'. The attributive verbs serve to assert that the object denoted by the nominative to the verb has a certain element (*b*) in its being. Now we have seen that, if B is the adjective corresponding to (*b*), the same assertion can be made by taking B for the attributive after 'is' or 'are'. For the resolution therefore all that has to be done is to find an adjective B corresponding to (*b*) and, if there is not one, to coin an adjectival expression.

The same holds for the relational verbs, inasmuch as every relation is also an element in the whole being of the thing related. The resolution then is always possible, whether the verb is an attributive, an ordinary relational verb, or the verb of being itself followed by a relational expression.

The attributive of the form 'is (L)' does not arise out of the resolution of these attributive and relational verbs, because they do not cover the whole being of what is denoted by the nominative case. Thus the statements, when resolved, will assume the forms having 'is B' in the attributive place.

We have shown above [2] how sentences in which abstract nouns denoting universals stand in the nominative case can be turned into the required form. The adjectival phrases which have to be invented for the purpose are often awkward and unnatural enough, but they are none the less legitimate. A second and special artificiality arises from the fact that the

[1] p. 156, note 1; §§ 415–21. [2] § 82.

distinctions of time represented by the different tenses of the verbs, including those of the verb 'to be' itself, have all to be expressed by using one and the same tense, the present tense, of the verb 'to be', the past present and future reference being transferred to the adjectival part of the attributive. But this also has its justification, as will be maintained later in the discussion of modality [1]

Finally, there is an artificiality sometimes employed in resolution which may seem at first not merely artificial but an infringement of the grammatical form The relation of attribute to subject being normally expressed by making the subject of attribution the nominative to the verb and taking, for the attributive, 'is (are)' with the adjective corresponding to the attribute, the same thing is sometimes expressed by turning the attribute into the nominative to the verb, while the name of the subject of attribution appears involved in the attributive side of the sentence. Thus, instead of saying 'this pear is yellow' we say 'yellow colour is in this pear', a form of resolution often employed by Aristotle But though the name of the subject of attribution 'pear' is on the attributive side, the changed grammatical form does not put it in the position of an attribute of the given yellow colour, or make it a form of the being of the colour The grammatical form indicates that the noun corresponding to the attributive adjectival expression is not 'pear', but 'the belonging to pear'. If it be objected that 'belonging to pear' is not an attribute of the yellow colour, or an element in it, because 'belonging to this pear' or 'being in this pear' means 'being an attribute, &c', and so covers the whole nature of the yellow colour, the reply would be that since the sentence means, as supposed, 'yellow colour is an attribute of this pear', this is a case where the attributive part has the form (L) as covering the whole being of the original nominative to the verb On the other hand it is clear that such artificiality is not necessary to effect the resolution into the given form, for the natural expression 'this pear is yellow' is itself of the given form. The artificial form is used by Aristotle as convenient for the presentation of syllogistic arguments.

[1] § 93

NOTE TO § 79.

'We have a mortal body' means that the body we have is mortal. With respect to this case there is a confusion in the grammarians in their use of the word predicate. In Greek Grammars for instance it is customary, indeed the rule, to say that when a substantive qualified by an adjective has the definite article and an article is not prefixed to the adjective, this shows that the noun is subject and the adjective its predicate

The nature of the idiom is, however, thus quite wrongly characterized Consider the examples, *τὸ μὲν σῶμα θνητὸν ἅπαντες ἔχομεν*[1] (Isoc *Philip*, 134) and *ἀπ' ὀρθῆς καὶ δικαίας τῆς ψυχῆς ⟨τὰ πάντα⟩ συμβεβούληκα* (Dem *Orat* 18. 298) In the first passage *τὸ σῶμα* is always said to be the subject and *θνητόν* the predicate of it, viz 'our body is mortal'. But if the sentence were an answer to the question 'what is there mortal in us?' the logical predicate would be not *θνητόν* but *τὸ σῶμα*, and *θνητόν* would correspond to the logical subject

The proper way of stating the idiom seems to be this.—If the connexion of a given subject and attribute (or attributive) is presupposed in the sentence and not made matter of statement, the adjective has the article before it—*τὸ θνητὸν τὸ σῶμα*, or, what is a case of the same thing, comes between the noun and the article (*τὸ ἡμέτερον θνητὸν σῶμα*). But, if the connexion of a subject and attribute is implicitly matter of statement, whether the subject is represented as having a particular attribute, or the attribute as belonging to a particular subject, then the noun has the article and the adjective not. So in the present case what is implied is *τὸ σῶμα ἡμῶν ἐστι θνητόν*. But either *σῶμα* or *θνητόν* may belong to the logical predicate [a]

[1] Madvig, *Greek Syntax*, § 12

[a Lit 'while the *body* we each have is mortal' Wilson's point may be examined in the following

ὁ τοξότης ἔοικεν οὐ σμικρὸν φρονεῖν
οὐ γὰρ βάνανσον τὴν τέχνην ἐκτησάμην. Soph *Ajax*, 1121–2

In Wilson's sense *βάνανσον* is subject 'You don't talk like a slave' 'A slave indeed, not slavish is *my art*']

X

THE COPULA AND THE MODALITY OF STATEMENTS

§ 84 THE mistake of confusing the distinction of subject and predicate with an objective distinction culminates in an account of the so-called copula which is often associated with it. This appears in a common doctrine that the word 'is' does not signify reality but is merely a sign of predication. Thus the members of the symbolic form, all A is B, are familiarly termed subject, copula and predicate, where the very name 'copula' implies that the verb 'to be' is a mere link, properly understood, a sign of the connexion of A and B in the sentence, for the terminology is justifiable only if it characterizes what is essential in that of which it is used. This doctrine is entirely opposed to the view we have maintained; namely, that, in the form in question, the verb 'to be' refers to the being of the object which is denoted by the nominative to the verb

Now we might reasonably suspect the possibility of such a change in the meaning of 'is'. It is a paradox that such a simple word should lose the very essence of its meaning, and still more so when it keeps that meaning in ordinary speech. Again, as a matter of logical formulation, if the copula has nothing to do with being and is only a sign of 'predication', surely it would be better to avoid the word 'is' altogether and to put a symbol for it, just as we put A and B for the (so-called) subject and predicate. This being so, it is remarkable that the verb 'to be' should be employed so commonly and in so many languages to express this relation and that its use should not only be allowed but be universal in logical treatises. There must have been good reason for choosing, consciously or unconsciously, this word in particular. The reason appears to be that the symbolic formula containing it is not merely artificial, but generalizes ordinary usage, that, in that formula, as we have tried to show,[1] the verb 'to be' retains its ordinary meaning.

How then could the contrary view have arisen? Here again

[1] § 79

we feel that there must have been some ground for accepting a theory so much opposed to the common uses of language. The doctrine seems to have arisen in the following way. In the form 'all (some, this) A is B', A being called the subject and B the predicate, as 'what is stated of A', it remained to find a function for 'is' in relation to the 'predication'. Now there can be no statement and so no 'predication' in the given form without the verb 'is' (or 'are'), and it was on this ground, probably, that the verb 'to be' was taken erroneously to be the sign of predication. Thus though Aristotle's analysis is into subject and predicate merely, we find the copula recognized as a distinct member already by Abelard,[1] who says, 'the members out of which categorical propositions are combined are predicate, subject and their copula (link). The reason is that we separate the verbal notion from the predicate and take it by itself . . the interposed verb links the predicate to the subject'.

There is something *prima facie* like this in Aristotle's *De Interpretatione*,[2] where it is said that the verb 'to be' by itself means no existing reality, and so in itself is nothing, but implies a certain conjunction (i e. of realities) which cannot be understood apart from what is conjoined This however is not part of a discussion of the analysis of the sentence into subject and predicate, but comes in merely to illustrate the doctrine that words in isolation from the sentence, though they have a meaning, do not mean that anything corresponding exists. It is in this connexion that Aristotle says it is not even true that the word for existence, or being, itself, when put apart from any context or sentence, means that anything exists. This then is so far from being a deliberate analysis of the sentence into subject, predicate and copula that there is no mention in it of predicate or subject and the question of such an analysis is not before Aristotle at all. Conceivably, if Aristotle had happened to reflect upon the connexion of this with the analysis of the

[1] Sunt autem membra [*videlicet* propositionum categoricarum] ex quibus coniunctae sunt praedicatum ac subiectum atque ipsorum copula, secundum hoc scilicet quod verbum a praedicato seorsum per se accipimus Verbum vero interpositum praedicatum subiecto copulat Abelard, *Dialectica*, Cousin, p 246 (Prantl, l c, vol II, p 196, note 370, cf *id*, p 266, note 11)

[2] *Αὐτὸ μὲν γὰρ οὐδέν ἐστι, προσσημαίνει δέ σύνθεσίν τινα, ἣν ἄνευ τῶν συγκειμένων οὐκ ἔστι νοῆσαι*, *De Int* 3, 16^{b} 24.

sentence into subject and predicate, he might have developed what had occurred to him into a distinct recognition of the verb 'to be' in the standard form 'A is B' as a third element, neither subject nor predicate, and might possibly have given it some technical designation, though we may question whether he would have called it a synthesis or copula or by some equivalent name. But in the whole of his writings this is never done,[a] which shows how little he had before him the idea of analysis into subject and predicate in this passage and how hazardous it would be to attribute the subsequent view of the 'copula' in any of its forms to him. A comparison of a passage in the *Metaphysics*[1] in its context with this one shows that by the synthesis Aristotle at any rate meant nothing merely subjective. He distinguished clearly enough an objective synthesis in things from our apprehension of it or our opinion about it, and it is to that objective synthesis that in our view the verb 'to be' refers This is quite sound doctrine in its general form, and remote from the later view, which we have been considering. In that view, the verb 'to be' (in the indicative) was conceived as effecting predication by joining the subject and predicate in the sentence. Thus it was called the copula and came to be conceived as a sign of predication only

Yet though there is no 'predication' (so-called) without a verb and, in this form, none without the verb 'to be', the verb is not only not merely a sign of predication, but it is not a sign of predication (in the proper sense) at all It does contain the sign of assertion, as explained in the discussion of the function of the verb, but this is not the only purpose it serves. In what sense it might be called a copula has been shown in the same discussion

§ 85. The view that the 'copula' is only a sign of predication was the better able to maintain itself because it seemed confirmed by certain propositions of the given form, alleged in its favour, where the predicate (or, more properly, the attributive) showed that the object denoted by the nominative was non-existent. An example of the kind of proposition in question is 'A dragon is an imaginary animal' But the true nature

[1] *Met* Θ, 10, 1051[b] 11

[a] But see *De Int* 19[b] 19–20[a] 3, 21[b] 26–33

of such statements was quite misunderstood. For though the dragon of course has no being in reality, when reality is distinguished from imaginary being, it has being in our imagination. But being in general obviously includes everything that is not nothing, and therefore includes these imaginary objects. Thus, in the given statement, this general being is conveyed by 'is' while the particular kind of being is conveyed by the so-called predicate [1] The statement then about the dragon is a true affirmative and does assert a kind of being for its subject.

Examples like this are easy to deal with because the so-called 'predicate' excludes the subject from a particular kind of being only; but they suggest a proposition in which the 'predicate' excludes the subject from every kind of being At first this might seem to be still easier to deal with, because such a statement could not occur, for what could be the subject (nominative to the verb) of it? A word would have to stand for the subject, but if the subject neither exists nor can be imagined nor in any way thought, the word would have no meaning and nothing corresponding to it, the statement therefore would be meaningless and so not a statement at all

Now in a way this is the true answer. But yet there do occur statements which apparently do present this seemingly impossible form They have a subject which we cannot say is a meaningless word and yet it turns out in the proof that there is no reality corresponding and no thought Such statements occur in science, we may for instance have an equation to determine the value of x and may by the final reduction get $x^2+3=2$. This defines x as a quantity such that if 3 is added to its square the result is 2. Such a quantity is not thinkable and yet we cannot say that such an equation in its final form when expressed in words as above contains mere meaningless words. They correspond to processes in science, and are illustrated for instance by every *reductio ad absurdum* argument in geometry. Suppose we say 'a square circle is a nonentity'. Here the nominative is not quite meaningless, for square and circle each have a meaning. There are instances in ordinary use where the absurdity is as great, though perhaps not so transparent, i. e. where we begin with a conception which implies

[1] Plato, *Sophist*, 237d

the union of certain elements. These elements in themselves are known to be real, and we gradually discover that their union in the given conception is impossible Thus a statement of the impossible form can actually occur There will be in it thinkable elements and it is their union which we pronounce unthinkable

We must further insist that such statements in their affirmative form *do* give their nominatives a kind of being 'X is a nonentity' is exactly parallel to 'an anemone is an animal'. Both indicate formally that their subject has a particular kind of being The attributive represents what this is. 'Nonentity' in fact is given as the kind of entity which X has. Thus the formal mistake of the statement is cancelled in the attributive through the artifice by which nonentity is expressed linguistically as if it were a kind of being; 'X has that kind of being which is not being', which is to say 'X has no kind of being'.

We are now able to see what the proper verbal form of the statement should be The given form is an artificiality; it does violence to the normal forms of expression, and we can see exactly what the artifice is It is the forcing of a negative statement into the form of an affirmative 'A square circle is a nonentity' really means this we have two thinkable notions, 'square' and 'circular', and then a negative statement depending upon the difference between them, namely, 'a square cannot be circular'. This shows what gave the artificial statement, with its fictitious nominative, a meaning; it shows also clearly that 'is' in that artificial form does mean being In fact we may give a very simple solution of the whole matter thus Just because 'is' does imply being, and because the artificial subject or nominative has no kind of being, we have to put a negative in some form or other in the 'predicate' of this pretended affirmative sentence in order to cancel the being implied in the word 'is'. To say now that in the proposition 'X is a nonentity', 'is' does not involve being is obviously as absurd as to say that in the negative proposition, 'A is not B', 'is' does not refer to being The whole difficulty then comes from the presentation of a negative statement as if it were affirmative, and this artificial operation may be performed on any negative statement whatever.

§ 86. There is another difficulty about the copula which is connected with its true meaning. Just as it was felt that, in the form $(s)_1$A is B, the word 'is' related to the being of $(s)_1$A, it was also felt that B was somehow identical with $(s)_1$A. This is in an important sense true, but it is liable to misunderstanding and produced a difficulty quite early in philosophy. According to Aristotle, a certain Lycophron [1] maintained that, in a Greek statement of this form, 'is' should always be followed by a word identical with the subject or nominative, so that 'man is white' is a wrong form, because man and white are not identical He proposed accordingly to omit 'is'. We may reasonably assume that he intended this only for ordinary forms of statement, where B is not identical with $(s)_1$A, and that he would have allowed the form 'this (individual) man is Socrates'. The Cynics [2] also are said to have held that the unity of the subject necessitated the identity of the 'predicate' with it. It is characteristic of them and of other philosophers of this period of Greek thought that they should have been content with stating the difficulty, without trying to get beyond it. So Gorgias enumerated his favourite paradoxes and apparently took delight in maintaining what, if taken seriously, would destroy the possibility of knowledge This degenerated into a scepticism in which no statement at all was possible except 'man is man' and 'white is white'.

The paradox is founded on something true. In the form $(s)_1$A is B, B relates to a kind of being (Bness) which $(s)_1$ has. There must be some unity between $(s)_1$ and Bness. Whatever that unity may be, it cannot be mere identity; there must be difference if it is to have any meaning The very object of a statement is to go beyond what is already known of the given subject. The so-called judgement of identity, A is A, which is sometimes put as one of the laws or forms of thought, is no thought at all, for as Hegel points out,[a] the propositional form as such is not A is A, but A is B. Such a statement as 'X is

[1] διὸ οἱ μὲν τὸ ἔστιν ἀφεῖλον, ὥσπερ Λυκόφρων, οἱ δὲ τὴν λέξιν μετερρύθμιζον, ὅτι ὁ ἄνθρωπος οὐ λευκός ἐστιν ἀλλὰ λελεύκωται, *Phys* A, 2, 185^b 27

[2] Plato, *Tht* 201D, *Soph* 251B, Arist *Metaph* 1024^b 32. [Ross, 1, pp 346–7]

[a] Die Form des Satzes widerspricht ihm schon selbst, da ein Satz auch einen Unterschied zwischen Subjekt und Pradikat verspricht Hegel, *Werke* (1840), VI, § 115 (Wallace, Eng Tr, pp. 213–14)]

X' has in a way the *verbal* form of a judgement or opinion, but a matter which cannot be the matter of a judgement or opinion.

Difference then being necessary, the solution is that Bness is not really different from the being of the subject of attribution, $(s)_1$A, but only different from that aspect of its being which is conveyed in that subject Thus, in 'this A is B', Bness and Aness are both parts of the being of the same subject, each identified with a part of its being, and each different from the other. This involves identity and difference, an identity which without losing its unity has these different forms of being. We thus get away from that false view of identity or unity, as mere self-identity without difference, which was the fallacy of the Cynics and apparently of Lycophron, to the true identity which as identity is identity in difference and as unity is a unity *of* differences, a unity, that is to say, such that the elements which we call different have existence or reality only in unity with one another; and, while each of these has in a true sense a being of its own whereby it is distinct from the others, yet at the same time each by its own being necessitates the being of those others [a]

This is the general conception of unity and difference covering every case of statement, but we cannot *a priori* say anything more about it; its peculiar character can only be seen in particular instances, as when, in the statement 'this piece of chalk is round', I distinguish chalk from roundness and understand their unity with one another Or again take 'this blue is a dark blue' The generic notion of blue differs from the notion of dark and light which we apply to colours in general; nevertheless blue cannot exist except as having one of these shades Here we have another kind of unity in difference

Thus in every statement two apprehensions are given of the reality of one and the same object, on one side in the nominative and on the other in the attributive Neither, in the normal case, is of the whole being of this object, but each is an apprehension of some aspect or part of its being. We see then what constitutes the unity in difference of what is stated. The difference is between two aspects of the object, and the unity

[a necessitates v l 'is in necessary relation to the being of those others' (1907) The 1904 text seems to have got into the printed copy by mistake]

is the unity of the same reality in both these aspects. Further, it is clear that if, on the analogy of old usage, we make the term copula stand for the unity of subject and predicate, that copula cannot be represented by 'is', nor by any ordinary significant word as opposed to a technical symbol, the nature of the unity varying with the matter of the statement.

The above investigation relates to the form with 'is' for principal verb, because it is here that the difficulty and paradox about the identity of subject and predicate occurs. But of any statement where the verb is not 'is' the same account has to be given. In the nominative, the object of the statement appears designated and distinguished by one aspect of its being, the verb, together with all grammatically connected with it, giving another aspect of its being, the object itself is an identity in these aspects.

§ 87. The difficulty may now suggest itself that the word combined with 'is' in the attributive may perhaps cover the whole being of the nominative, so that the statement would seem to express an identity Now it is the case that there are attributives of such a kind, and according to the usage of language they are combined with the word 'is' Hence the reference in 'is' can be to the whole being of the subject as well as to the partial being The difference, however, is provided for in the verbal form, for the attributive when it refers to the partial being of $(s)_1$, has normally the adjectival form, as in 'lemons are sour', while it is usual to employ a different form of words when the attributive somehow covers the whole being of the subject. We then have a nominal or substantival instead of the purely adjectival form, e g 'a lemon is a fruit', where 'a fruit' covers everything in the subject.

Is this then not a mere identity or equation? It would be well first to clear up the true meaning of equation in algebra,[a] for that might seem an obvious case of identity between the terms represented on either side of the equation We shall find that an equation is never a mere identity when it represents any real activity of thought. The equation $x^2-2x+2=1$ is a judgement (some would call it a synthetic judgement) from which we get some information about x $x^2-2x+2=x^2-2x+2$

[a Cf. Lotze, *Logic*, 1 2, § 51]

is a mere identity, for it gives us no information about x. It is an identity but not a judgement. Again $(x-1)^2=x^2-2x+1$ is an equation which gives information, and though it is sometimes called an identity because the development of $(x-1)^2$ is identical with x^2-2x+1 and gives no information about the magnitude of x, it is not a mere identity in so far as it explains what is the expansion of $(x-1)^2$ This indeed is obvious from the fact that we have to prove the equality by multiplication, and appears more clearly in a complicated instance like the expansion of $(x-1)^n$, by the binomial theorem Both kinds of equation have the sign =, but what characterizes the true equation is that, though the subject-matter is the same on both sides, the aspect of its being expressed on one side and on the other is different. The sign of equality represents an identity of the subject-matter in these two aspects In the ordinary arithmetical or algebraical equation the number of units in the quantity on one side is identical with the number of units in the quantity on the other, but the two sides represent two different modes of constructing this same number of units and it is because of this difference that the equation is of any use On the other hand, if the method of construction is the same on both sides, the equation degenerates into a mere identity, and is by itself of no use. Thus $3+2=4+1$ is a true equation, for it has to be taught, $3+2=3+2$ is a mere identity Generically an equation represents two different modes of operation which have the same result, the sign of equality representing this sameness or identity of result, it is accordingly not necessary that the equation should represent operations of the construction of magnitude merely; a vector equation for instance represents [a] two different operations by which the same position is reached in space

§ 88. In those statements of which the attributive side somehow comprises the whole of the subject, the subject, if it is the

[a] This should rather be 'may represent' 'The sum of the *radii vectores*, drawn from the *foci* of an ellipse, is constant and equal to the major axis' is a quantitative vector equation An example of a vector equation which does not represent an identity in the usual sense is that A+B=R, where A and B represent two forces or velocities and R their resultant The illustration was probably suggested by Venn, *Symbolic Logic*, p 99 Cf Lotze, *Logic*, III 5, § 361]

logical subject, may be something known first under a certain aspect of its reality and then we may advance possibly to something which may be said to cover its whole reality. Thus an object might be first known as something resembling a plant and only part of its nature might then be given in the subject (nominative), but when we get to know that this plant-like object (an anemone) is an animal, the logical predicate covers the whole being of the subject, and it is so far new to us that instead of being a mere identity for us it is something which we did not even suspect at first. In these quasi-equational statements generally there is always a unification of different aspects of the same object For even if an attributive which covered the whole of its nominative expressed every part of its being (which is not really possible) and therefore included *explicitly* the elements already stated in the nominative, there would still be a unification of differences in so far as the attributive added new characteristics to the old But now such attributives in practice do not represent the completed thought of the subject, they are rather the thought of the subject as something complete. The definition of a circle, for example, covers the whole reality of circularity and is intended to do so, yet it does not *express* the whole reality, the details of which we can only learn by demonstration. Indeed in this case the whole reality is infinite and therefore incapable of complete detailed expression The same thing applies when the attributive is not the true logical predicate

In the normal use of 'common terms', the whole nature of the nominative of which they are the attributive is assumed to be implicit in the meaning of the 'common term', but it is explicitly present to the mind in a part only of its total reality Thus the common term 'an animal' involves, in the first instance, the idea of an organism with certain attributes of motion and life, it implies also that the full knowledge of such a notion would be the full knowledge of the thing This accounts for the artificiality which we find in such expressions as 'Socrates is a white object', for, according to the natural use of language, such a common term as is here on the attributive side ought to include the whole reality of the nominative, and the definite notion in it ('white') ought to refer to this whole

being, whereas it refers only to a part. The natural grammatical expression then would be one in which the adjectival form replaced the substantival form of the common term. Thus the proper expression is 'Socrates is white'. This seems to be the distinction which underlies Aristotle's theory of certain (natural) genera and species, certain classes which had some kind of prerogative over others The nature of that prerogative, however, he can hardly be said to have made out His scholastic followers accepted it, as usual, uncritically and without elucidation, and through them it descended into the ordinary syllogistic logic together with other obscure and unanalysed conceptions such as 'essence' [1]

Aristotle would say of *white* and *animal* as attributed to *Socrates* that *animal* is a true *genus* but *white thing* not The kind of explanation which he offers is that you can say 'Socrates is essentially a kind of animal' [2] but he would not allow 'Socrates is essentially a kind of white (thing)',[3] though he does not make it clear what is the matter with the second linguistic form However he says sometimes of the first that it expresses the essence of the subject and that the other does not. Of the first, *animal*, he uses the expressions 'that which is stated of a subject', or 'genus' or 'species',[4] implying that *genus* and *species* proper belong to the essence, whereas the second, *white(ness)*, is *accident* [5] In the *Categories* we have another terminology which seems isolated in Aristotle's works but seems to throw light on his meaning *Animal* in reference to *Socrates* is said to be 'of a subject',[6] whereas *white* is 'in a subject' The preposition 'of' tells us nothing, for it would be true to say 'white(ness) is asserted *of* Socrates',[7] but the second phrase with the preposition 'in' is suggestive and we may infer that probably 'whiteness' is thought of as *in* Socrates, whereas *animal* or *an animal* [8] is somehow identified with Socrates We should then probably understand the first phrase as 'of a subject *qua* subject' [9]

[1] See chs 16 and 17, *infra*
[2] Σ. ἐστὶν ὅπερ ζῷόν τι
[3] Σ ἐστὶν ὅπερ λευκόν τι.
[4] τὸ καθ' ὑποκειμένου οὐ τὸ γένος οὐ τὸ εἶδος
[5] συμβεβηκός.
[6] καθ' ὑποκειμένου
[7] τὸ λευκὸν κατηγορεῖται κατὰ τοῦ Σ
[8] ζῷον οὐ ζῷόν τι.
[9] καθ' ὑποκειμένου ἢ ὑποκείμενον [For the passages referred to above, see § 72]

The real distinction seems to be that the universal which gives rise to what Aristotle calls a *genus* is that universal of which the particular is what he would call a complete reality (the individual substance), while the other universals, which are not allowed the same rank, are simply universals of which the particular is not a complete reality but an attribute of a complete reality, that is of an individual substance. Thus the particular of whiteness is not 'a white object', but the particular whiteness of this particular substance. Aristotle hardly seems to have realized clearly that this was the rationale of the distinction, but it is indicated by his statement in the *Categories* about the relation of 'second' and 'first' essences. True *genera* and *species* are there termed 'second' essences because, as he says, they are the essences *in* which are the first essences, namely the individual substances

§ 89 The principles developed may now be applied to the discussion of some disputed points which relate to statement in general Since the time of Kant the general theory of the proposition has commonly been discussed under the four heads of Quantity, Quality, Relation and Modality It is this last head with which, as arising naturally out of the discussion of the verb 'to be' in the symbolic form A is B, we will begin. By the modality of the copula is generally understood a modification introduced into the so-called copula 'is' in the form S is P It ought therefore to include tense-modification, but what is usually understood is the division into 'is', 'may be', and 'must be', into what are called assertoric, problematic, and apodeictic propositions respectively. This distinction of propositions is already indicated in the *Prior Analytics*, though the above nomenclature is not to be found there In Aristotle we find that the theory of the syllogism follows this division. He does not discuss assertoric syllogism merely, but treats in considerable detail the form which the conclusion may take when one premiss, or each premiss, is problematic, or apodeictic. The usual question which logicians raise about modality is whether this threefold difference should be regarded as belonging to the 'copula', or whether it should be placed in the 'predicate', predicate being here used in the improper sense already

criticized.[1] The question then is not whether this transference of the distinction to the predicate can always take place, but whether it is right or not that it should. The most adequate answer must depend on the view which we have taken of the copula in the given form, but we shall find that we can in fact decide the question merely by reference to what is ordinarily meant by subject and predicate in the doctrine under review.

§ 90. We have maintained that the copula means existence; if therefore it is distinguished into 'is', 'may be', and 'must be', that would be an objective distinction between being, possible being, and necessary being Can such a distinction be objective? In any case there is one preliminary objection. We cannot co-ordinate mere being with possible and necessary being mere being would only be intelligible as the abstract universal of which possible and necessary being would have to be the species But, taking the distinction as it stands, consider the problematic statement 'S may be P' What do we mean when we call an objective reality possible? We do not of course mean that it is necessary, for the statement 'S may be P' implies that S may not be P Now, when we think of a possibility as objective, we ordinarily suppose that there are certain conditions existing which are necessary to a given result, but are not the whole of the necessary conditions These realized conditions appear as a potentiality The development, however, of the potentiality depends upon the realization of the remaining conditions Whether these are to be realized or not is a matter of necessity which cannot be indeterminate If the unrealized conditions are not going to be realized, then there is no possibility at all. In fact, that only is possible which is going to happen and is in that sense necessary also on the objective side. There is no objective distinction between possible and necessary being except in a modified sense, easily understood. Hence if the 'copula' denotes objective being, it cannot be distinguished into 'may be' and 'must be', and the distinction into apodeictic and problematic cannot belong to the copula. Similarly we cannot distinguish assertoric and apodeictic, because whatever is, is necessarily what it is

[1] In the following, except where otherwise stated, we shall use 'predicate' as simply meaning P in the grammatical form S is P

§ 91. Between these three forms of statement, however, there is obviously a real distinction, for we do not use them indiscriminately. The truth seems to be that they express in their ordinary use a subjective distinction, a difference not in reality, but in the completeness of our knowledge. The form 'S may be P' according to common usage generally represents the lowest degree of knowledge; it signifies that, while we do not know that S is certainly P, we either know that some conditions favourable to it exist, or, at least, that we know of nothing to the contrary. With an increased knowledge of such conditions our belief may be, as we say, stronger, and we represent this by the phrase 'S is probably P'. Again, as to the difference between assertoric and apodeictic propositions, 'S must be P' is the natural form to use when we know the conditions which necessitate the fact stated, whereas 'S is P' corresponds to the case where we are sure of the fact but do not know its reasons and thus corresponds generally to what are called (inaccurately) 'judgements' of perception. It is true that a man who believes that 'S is P' on the evidence of perception is entitled to say that 'S must be P', but as a matter of fact we do not express ourselves in this way unless we know not only that there is a necessity but also in what that necessity consists. The distinction then is subjective, referring to a difference not in things but in our attitude towards them.

§ 92. This same conclusion may be reached simply, without any appeal to an objective theory of the copula. The modal distinction of propositions implies that, in the assertoric, problematic and apodeictic forms alike, S is subject and P predicate, the difference in the propositions lying in the different forms of the copula On the view before us the predicate, always assumed to be P in the form 'S is P', is 'what is asserted of the subject', assumed to be S in the aforesaid form. Now, obviously, in every assertion something must be definitely asserted of something else or there is no assertion at all, and the true predicate must be definitely asserted of the subject. If, then, we are thinking about two elements of reality S and P, so long as we are uncertain whether P can be 'asserted of' S, we cannot relate them to one another as true subject and true predicate in the present sense of predicate. Thus, in 'S may be P', if P and S are true

predicate and subject, P must be 'asserted of' S, and the proposition must mean 'S *is* P', which it does not. Thus, if S is true subject, P cannot be true predicate, and conversely. To find out what is subject and predicate we must ask what is definitely asserted, and that, obviously, is not that S is P; and so P is not what is definitely asserted of S Indeed, we are doubtful whether S is P, though we know nothing against it. Now it is this fact, involving something about our own state, that the proposition definitely affirms To express this more clearly the statement may be put into such forms as the following —'that S is P is uncertain', or 'probable', or 'my knowledge of S is such that I am uncertain whether it is P or not'. What is taken for the true logical subject in the analysis depends on the context, that is it may or may not be S in the above examples, but it is necessary in any analysis to make the possibility a subjective one Our conclusion must be that the doctrine that the modal distinction belongs to the copula is erroneous, because S and P cannot be treated as at the same time respectively subject and predicate in the three forms of proposition S is P, S may be P, S must be P We observe also that the word 'is' retains its proper force in whatever form the true analysis is given, and that the 'affection of the copula' appears as a rule in the predicate, if we mean by predicate the true logical predicate, but that under some circumstances it may appear in the logical subject.

§ 93. Besides the distinction of possibility, actuality and necessity, there is another which has sometimes been supposed to belong to the copula, that of past, present, and future time, sometimes called a kind of modality We have maintained that while the word 'is' in 'S is P' represents being in general for the subject, the 'predicate' expresses a special determination of being which is assigned to the subject in the statement Thus the question whether the time distinction is to be put into the copula takes for us the form whether it is to be put into the general being or into the special being represented by the subject (nominative) and attributive Now, temporal distinctions are obviously specific determinations of being, and so, according to our theory, their place must be in the 'subject' or 'predicate' for the same reason that any other special determination of

being must be there. If then we were to exclude temporal distinctions from the predicate, we should have also to exclude such modifications as adverbs of place. Our answer then must be that as, in this particular form 'S is P', the verb 'is' stands for the being in general of the subject, whether past, present, or future, the temporal modifications cannot be put into it How then are we to meet the linguistic difficulty which presents itself? *Prima facie* the tense of the word 'is' is present and therefore does seem to refer to time. How can we maintain that it is without tense, for our conclusion commits us to that? The difficulty is unreal and may be removed as follows. The general idea of being is obviously wider than the temporal distinctions, for it is something common to all three times, present, past and future, in so far as all three are opposed to complete non-existence. This general notion which transcends the distinctions of time is, nevertheless, according to established usage expressed by a special idiom, the present tense of the verb 'to be' So, in familiar speech we use the word 'is' actually of a series of events considered as a whole, though, of course, the series as a whole never exists in any one moment of time which we could call present Thus we say, 'the Elizabethan period is one of the finest periods in English literature'. So of something which is past we use the word 'is' with no sense of doing violence to its meaning, 'Socrates is the most striking figure in the history of Greek philosophy'. In the very common phrase 'so and so is a thing of the past', the present tense 'is' represents being generally, while the past, or being in the past, is put as a specific form of this general being. The same present tense is idiomatically applied to actualities not really determined in time, inasmuch as they do not happen or elapse and their existence cannot be represented as a time process, actualities for which there is properly no past, present or future, like space itself, which is nothing that either happens or elapses. Again we use the same idiom of laws of nature, which are not events but universals.

We see, then, that this general abstract meaning of 'is', this tenseless aspect of it, is not a logical convention nor an artificiality but embodies the usage of living speech That is why such a word as 'is', though apparently referring to

a particular time, could come to be selected as a part of the general form in which every statement can be expressed.[1]

NOTE. In Greek, thought sometimes attempted to free itself from the limitation of time by using the past tense for something not conceived as over and gone but as still in existence. Thus the imperfect ἦν (*lit.* was) is used idiomatically to express something generally valid Thus Aristotle uses for the essence τί ἐστι (what is) the expression τὸ τί ἦν εἶναι. One is at first tempted to conjecture that the contradiction of the tense time to the present reality to which it refers enables it to serve as a sort of symbol of the abstraction of time altogether. This is however too artificial and we must see in the formula an instance of an idiom familiar both in Greek and English The past tense serves as a sort of *oratio obliqua.* It does not mean that the quality signified by the verb belonged to its subject in the past, but that in the past we stated and agreed that it so belonged. In English we might say, for instance, but a right was something absolute', meaning we agreed that it *is.* In German, the narrative effect is often given by the subjunctive, as in 'Nun aber ein Recht ware was absolutes' The latter is a favourite idiom for reporting the words of another person in ordinary *oratio obliqua.* 'Ihr Bruder ware unschuldig' would mean, in some contexts · 'She said her brother was innocent.' Thus in Greek and English idiom the past tense may indicate something which is understood or taken for granted. Remembering then the idiom by which τί ἐστι (what is) is 'logically' equivalent to ὅ ἐστι (which is), τί ἦν may mean what the thing is understood to be—what it is decided to be.

§ 94. Certain abbreviated forms of expression, utterances like 'it rains' or 'Fire!' are rightly seen either to be or to involve statements, and the absence of a definite grammatical nominative, or rather the absence of an express distinction between subject and attributive in the one case, and the indefiniteness of the subject of attribution in the other, have seemed to favour the view that in such statements reality in general is the subject. Yet the proposition 'it rains' is understood to be not a statement that raining is something which occurs in general,

[1] §§ 77 (p 182) and 84.

but that it is happening here and now. For a person saying 'it rains!' would not be understood to refer to the state of the weather in a distant country. It is therefore a definite statement of a fact and admits of analysis like any other statement. For instance, if it is an answer to the question, 'What is the weather like?', the subject is 'weather'. 'Fire!' involves a statement that a fire is actually taking place, but not that only. It has a peculiar form of expression, for of course into expression enter tone and gesture. These accessories are not represented in the printed or written word 'Fire!' and are but imperfectly suggested by the note of interjection. Simple as it looks, it is actually a complicated form. The tone and gesture are not appropriate to the mere judgement which the person speaking has formed for himself, that there is a fire somewhere. His utterance not only implies this, but by tone and gesture also gives a warning. The accessories then determine that it is not a case merely of a fire somewhere in general, but of one somewhere near, which interests us and is important for us to know about. Moreover, the warning accent normally conveys the idea that the fire is dangerous to *us*. If this were not the case, the utterance would have a different tone and an explanation would follow of where the fire was; but more probably the interjection form would not be used at all. If the speaker says no more than 'Fire!' the implication of his tone may be that it is dangerous to us

Hence the matter is complex, and the statement involved may be analysed as follows. We see a man hurriedly and excitedly advancing and we believe that he has important news. This then is the logical subject for us and his interjection gives the predicate. If we imagine a listener who has not seen him, there may be a logical subject and predicate differing from one such listener to another For one, the idea of fire may come first and he may immediately afterwards realize the tone of alarm; with another perhaps, the appreciation of alarm in the sound may come first; and in that case 'something alarming' is his subject. Lastly, we must not exclude the possibility (in the case of a listener aroused by the sound only) that an order in time between the elements does not occur, but that they are apprehended simultaneously with no time distinguishable. Then

neither element can be prerogative as against the other, and the statement so communicated or understood has not properly a logical subject or predicate at all, a contingency already provided for.[1]

In the above analysis we have considered what judgements or opinions the exclamation 'fire!' implies as formed by the person uttering it and by those who listen to it. But the word is not intended merely to express judgement and opinion and to communicate information, its main use is to convey a warning or exhortation, and this is not a judgement nor an opinion. This leads naturally to the general question as to the logical analysis of a wish, command or entreaty. By some these have been treated as judgements or propositions, and for the purpose of logical analysis such a sentence as 'may you succeed' is considered as equivalent to 'that you should succeed is what I wish'; 'put that down' again is made equivalent to 'that you should put that down is what I command' Now this means that such verbal expressions are to be taken as statements of facts, arising from an apprehension of these facts or from an opinion about them But this is a mistaken view We must ask what the words are intended to express, for the intended meaning can alone decide the question The one sentence expresses a wish and the other a command. But a wish is not the apprehension of the nature of a fact, whether the apprehension is a judgement or not, nor is it an opinion about a fact. The same is true of the command A question also is not the expression of knowledge or of opinion The listener to the question 'what does this weigh?' doubtless believes that the questioner desires information, and some would say that he judges this; but that belief or judgement is not the *question*, any more than the questioning attitude can be the judging or believing attitude. Expressions of surprise, again, and of emotion generally may be treated on the same principle

[1] § 80.

XI

SYNTHETICAL AND ANALYTICAL 'JUDGEMENTS'. THE RELATION OF PROPOSITIONS[a]

§ 95.[b] THE doctrine that in its proper logical sense the predicate in a given judgement or opinion is a new determination of the subject, as previously conceived by the person judging, leads us to consider a traditional distinction in modern logic to which it seems opposed, the distinction of analytical and synthetical judgements. An analytical judgement is generally defined as one in which the conception of the 'predicate' is already contained in the conception of the 'subject'. A synthetical judgement is one in which the conception of the 'subject' does not contain the conception of the 'predicate'. Now if predicate is taken in what seems its proper sense in logic, it would follow that there could be no such thing as an analytical judgement.

It must be admitted that in a sense the conception of the subject always involves that of the predicate, in so far as a thing necessarily has of its own nature the properties which we rightly assign to it. But that is not what is meant by an analytical judgement in the view we are to examine, and for accuracy the definition should be restated as follows. 'an analytical judgement is one of which the predicate is contained explicitly in the subject as the subject is conceived by the person judging; in a synthetical judgement the predicate is new at least to the person judging.' If then it is the essence of a 'judgement'

[a] From this point onwards it has been difficult to make the terminology consistent. This chapter, for instance, was completed fairly early and I have left the language substantially as it stood in the printed version of 1913. The author, if he had edited it, would have tried to avoid expressions like 'conception of the predicate' and the use of the word 'judgement' in its current sense, not his own. He had however usually substituted the word 'statement' for the verbal expression which would ordinarily be called 'proposition'. See p. 235, note 1.

[b] Cf. Lotze, *Logic*, III. 5. §§ 363–4.]

which has a logical subject and predicate to give a new determination of its subject in the predicate, an analytical judgement as just defined is a contradiction in terms. It has however been gravely maintained that every synthetical judgement inevitably becomes analytical. In a synthetical judgement of the form $(s)_1$AB is C, C is the new element and therefore the judgement is synthetical; but it is maintained that, after the act of judgement, C becomes an element in $(s)_1$ or rather an element in the conception of $(s)_1$ for us. Thus '$(s)_1$ is C' is now analytical, is in fact equivalent to '$(s)_1$ABC is C'.

Now, in the first place, even were this so, the analytical judgement would seem to be posterior to the synthetical in order of thought, for it depends entirely on the synthesis which precedes it. There cannot be analysis unless there has been synthesis. Secondly, we can show that it is an illusion to suppose that a synthetical judgement can ever lose its character of synthesis and pass into the analytical in the way supposed. When would the synthetical judgement exist at all? It would follow that the predicate the moment it was assigned to the subject became part of the subject, and the judgement would be instantaneously analytical Let us however waive the difficulty and suppose, for argument's sake, that the synthesis takes place first, and that the judgement becomes analytical on repetition, this is probably what is intended, the temporal difficulty having escaped notice altogether. Now under what circumstances is such a judgement repeated? One obvious reason is to inform some one else, who only knows that $(s)_1$ is AB. For him the judgement $(s)_1$AB is C is clearly synthetical But what of the original author when he repeats $(s)_1$ is C? He does not mean that the judgement is valid because of the identity between the C in the predicate and the C he has already thought of as in the subject. On the contrary the statement is of no interest except as a repetition of the original 'synthesis'. It is not indeed a new truth to the person so judging, but that does not make it analytical; and thus he would give as the reason why $(s)_1$ is C, not that $(s)_1$ already contains C but whatever reason had been found before for joining C to something different from itself in $(s)_1$, viz AB. The importance then of the statement when repeated lies just in this synthesis

of C with elements different from itself, not in an equation of C to itself.

If we insist on our previous objection that a judgement, if it could become analytical at all, must do that instantaneously, then we could not really say it *became* analytical, but that it always *was* both; we could not say that the judgement had lost its original synthetical character, but rather that it never had a purely synthetical character. But such a change of statement would be met precisely as before, for it would still be true to say that the meaning of the judgement as such lies in the association of C with elements other than itself, and never in an analysis

§ 96. A difficulty may arise from the fact that when we repeat '$(s)_1$ is C' we do not always think of the nature of the synthesis of C with A and B. We seem at times only to remember that $(s)_1$ is C, and this may have the appearance of a mere analysis of a conception in our minds of $(s)_1$ as ABC. This difficulty is unreal; what we are doing in such a case is not to make an analysis, but to remember that there was a synthesis, though for the moment we are not attending to its nature or may have forgotten it. In a mathematical demonstration, for instance, we often use a formula without remembering the process by which it was reached But the use of it is entirely due to its synthetical character, and it is only thus that it can be any help in our demonstration No one can get anything out of a statement of the form C is C. Suppose that we wanted to prove $(s)_1$ABC is D,[a] and that we established this by showing that D attaches to C. Then the last stage of our argument has the form C is D, but $(s)_1$ is C, therefore $(s)_1$ is D. Now as the conception of $(s)_1$, as ABC, is presupposed, the premiss $(s)_1$ is C may look like a mere analysis, but what we really do in this proof is to pick out the attribute Cness from among the other known attributes of $(s)_1$ as the one which is responsible for D. This shows the truly synthetical character of the premiss we were using. We should not have picked out this attribute at all unless it was to be distinguished from the others, and that shows we were thinking of $(s)_1$ as something else besides C; $(s)_1$ is not only

[a In the lectures the illustration used here was from 'the opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles']

AB, but also C. Thus the interest of the 'judgement' lies in the synthesis of the different elements A, B, C. This comes out clearly if, in that last stage of the argument (C is D, but $(s)_1$ is C, therefore $(s)_1$ is D), we replace the statement $(s)_1$ is C, by C is C. This shows us at once that the interest of repeating $(s)_1$ is C lies not in any identity between C and $(s)_1$, but in some difference. What we really want to say is that that which is AB as well as C is also D, because Cness involves Dness. This is equally true whether the presupposed conception $(s)_1$ABC is the result of a demonstration that AB necessitates C, or is an undemonstrated definition with which in a particular science we begin. For the definition itself has only meaning, interest, and use because it is itself a synthesis of different elements.

§ 97. There is one general consideration which covers all cases. If '$(s)_1$ is C', when repeated, were really an analytical judgement, it would be of the form $(s)_1$ABC is C, where C is explicit both in subject and predicate, the truth of the judgement would then lie in the identification of C with itself, in other words, the validity of the judgement would be derived entirely from the identical judgement 'C is C'. But it is evident that the so-called *identical* judgement violates the very idea of judging. There is no such thing except as a verbal form It is nothing for thought, and, inasmuch as the analytical thus really resolves itself into an identical judgement, we may say of it also that it exists only as a form of words and is nothing for thought.

If now we give to 'subject' and 'predicate' the meaning they undoubtedly have in the ordinary treatment of the syllogism, the subject being what is denoted by the nominative case to the verb 'to be', and the predicate the adjectival phrase or noun phrase which follows it (a distinction we have designated as that of subject and attributive), the same general argument will apply. For it will be evident from what has been said of the distinction that the purpose of the attributive is to express for the subject an aspect of its being different from that expressed in the nominative case The same again holds in sentences where the principal verb is not the verb 'to be', if the term 'predicate' stands for the attributive, and the attributive consists of the verb or verb phrase attached to the nominative.

In conclusion then, the repetition of a synthetical judgement has its meaning and value as recalling an original synthesis: its meaning never is that the predicate is attached to the subject because it is already there. The doctrine that a synthetical passes into an analytical judgement is a mere confusion, and strictly speaking there is no such thing as an analytical judgement.

§ 98 [a] So far we have implied as the general form of every affirmative statement, what is commonly called the categorical form (in the ordinary notation, S is P), where a so-called predicate [1] P is absolutely affirmed of a subject S, and it has been maintained that this unconditional affirmation is the necessary characteristic of statement as such Distinguished however from the categorical we find in logic another form recognized, the hypothetical, and it would often be said that by this is meant a form in which the predicate is not absolutely affirmed of the subject, but only under a certain condition. If so, there would be a form of statement in which the true predicate was not absolutely affirmed of the true subject This would seem to contradict the account we have given, and we must therefore consider the value of this current distinction and ask whether we must revise our account of statement so as to make the hypothetical form co-ordinate with the categorical.

We may take as the general form of an hypothetical proposition, using the ordinary notation, 'S is P, if a certain condition is realized', or 'S is P, if X is Y', where S is P is called the consequent and the 'if' clause the antecedent Now if we confine ourselves to the idea of a condition, it is not necessary to express a condition in an hypothetical form at all, for the ordinary categorical statement of the form S (=ABC) is P, really

[1] In the ordinary definitions of the categorical and hypothetical propositions, the terms 'subject' and 'predicate' always have the meaning they have in the theory of the syllogism, and denote not the logical subject and predicate, but what we have called 'subject' and 'attributive' In the following discussion the terms 'subject' and 'predicate' will be retained on the understanding that they have this meaning, because the theories examined are expressed in this terminology For the same reason the ordinary symbolism for the proposition will be used

[a] Kant based the division on the Category of Relation *Kritik d r V*, 1st ed, p 178, *Logic*, § 60 Cf infra, § 102]

ascribes P to AB under the condition C. This is evident when we compare AB is Q with ABC is P; the contrast of the two implying that, whereas we attach Q unconditionally to AB in the second case, we attach P to AB only when qualified by C. In this way the categorical form will yield a conditional form, for from 'ABC is P' we have 'AB is P under the condition C', and from that it might seem, though erroneously, that we could derive the hypothetical form 'AB is P if AB is C'. In short, if the subject of a categorical statement is complex, as ABC, any member of the complex, or any combination of members, can be taken as subject and the remaining members represented as the condition under which the old predicate is attached to the new subject. Or we may take the whole subject conception for predicate in the antecedent, thus from 'all ABC is P' we should get 'If anything is ABC, it is P'. The universal categorical form thus connected with the conditional and hypothetical would usually be said to be capable of reduction to an hypothetical form It is indeed maintained by some logicians that the hypothetical is the truer and more accurate form not only of the universal but even of the particular proposition. We shall maintain, on the contrary, first that the categorical cannot be reduced at all to the hypothetical form, much less be replaced by it, because the hypothetical cannot express the full meaning of the statement which it is to replace, and, secondly, that the hypothetical is not the true form in an ultimate analysis of the statement or proposition, since it can be admitted to be a statement at all only in so far as it is itself categorical. Thus we shall confirm the view already taken, in the discussion of modality, that all statement as such is categorical, and develop from this the position that what is really to be contrasted with hypothetical judgement or opinion is non-hypothetical statement, both being species of categorical statement.

§ 99. We have seen that in a sense an hypothetical statement can be derived from a universal categorical. Nevertheless this hypothetical cannot express the full meaning of the categorical form for which it is substituted, and the categorical therefore cannot strictly be said to be reduced to it. If we compare 'all A is B' with 'if a thing is A, it is B', it is true that the first

involves the second, but normally something more is expressed by the categorical. The question is a linguistic one and can only be answered by investigating the normal habit of a particular language. When in English we say 'all A is B', we usually imply that there are such things as A, that the condition 'if anything is A' is realized. By contrast the normal implication of the hypothetical form is to leave the realization of this condition undecided. Consequently, when we are not sure that the condition is realized, we avoid the categorical form and choose the hypothetical. Otherwise we might claim to tell the truth if we said 'all AB is C' though we knew well that no AB is C, for we might contend that the statement means in strict accuracy 'if there are any A which are B, they are C', and this we might even in some cases justify by the admitted fact that all B are C. Thus all we *say* is 'if there are any AB, they are C', while really no A is B.

Clearly in common life in such cases we should be said to be either jesting or deceiving. And in fact a number of elementary jests are founded upon the circumstance that, while the normal meaning, apart from any context, of an affirmative statement is that its subject exists, there are exceptions arising from certain well-understood idioms which cause no ambiguity. Thus no one is deceived by the statement 'when the lion on the Royal Exchange hears the clock strike one, he wags his tail'. 'Trespassers will be prosecuted' has been seriously alleged to show the hypothetical character of the categorical formula,[a] on the ground that the notice, so far from implying that there will be trespassers, is just put up to prevent there being any. But this is a special idiom, applying to general statements which are not universal in the true scientific sense, and any generalization from it may be refuted by instances of the same kind of expression where the existence of the subject is obviously taken for granted. Thus the notice 'All trespassers have been prosecuted' is understood to mean that there have been trespassers. In the case of categorical statements universal in the true scientific sense no examples could be found which were merely hypothetical.

[a A reference, apparently, to Bradley, *Logic*², I, p 48, and I, II, § 6, cf. Bosanquet, *Knowledge and Reality*, I, § 8]

On the other hand, just as the categorical statement in a certain idiom may represent an hypothetical, so also the hypothetical may idiomatically represent the categorical Thus when it is said that if potassium is put into water, there is combustion, this is really understood as equivalent to 'whenever potassium &c', which certainly implies that the condition can be and has been realized Accordingly the hypothetical form is used in certain familiar idioms, when it is understood well enough that the condition can be realized. This is very common for instance in geometry in such expressions as 'if one side of a triangle be produced', and comes probably from thinking of the construction as depending on the reader's will to make it The enunciation too of experiments in physical science is often expressed in a similar way Normally the hypothetical statement puts the condition which it expresses in such a way as to make it understood that the realization of the condition is left quite indeterminate

§ 100 This fundamental difference between hypothetical and categorical statement is seen still more clearly in the singular categorical statement, which is of the form 'this ABC is P'. If we apply to this the method by which an hypothetical is extracted from the categorical, we shall get this kind of result.— 'if any A is this BC, it is P', or, 'if this A is this BC, it is P'. Such unnatural forms of course never appear. their absurdity lies in putting into a given form a matter which contradicts that form

Consider the form 'if any A is this BC, it is P'. This has an antecedent with a general subject But now when the subject of such a clause is general, it is implied that the predicate of that clause might attach to several subjects of the same kind. 'If any metal has such and such qualities, it will attract iron', relates the predicate to the class of metals in general. The form, however, 'if any A is this BC' contradicts this by putting as if general what the matter of the antecedent shows to be only particular, for the condition does not relate to any A but only to the particular A which is this BC. In an illustration the absurdity of the contradiction between the matter and the form is obvious. Thus 'this heavy grey piece of metal attracts iron', becomes 'any heavy body attracts iron if it is this grey piece of metal'.

Further, 'if any A is this BC, it is P', may be reduced to 'if any A is this A, it is P', since the individual which is this BC is by assumption exactly this A. But since the hypothetical statement as much as the categorical implies a distinction of the elements called its subject and predicate, the identity in the antecedent as thus expressed is clearly as nugatory as it is in the categorical form of statement Finally, and this is the fundamental absurdity in this attempted reduction, we feel the form to be contradictory because there is no doubt whether some A is this A, or whether any A is this BC; for we can only say that if any A is this BC, it is P, because we know that this BC which is P is A.

This leads us once more to an essential characteristic of hypothetical statement. *It must, as such, put its condition as something not certainly known* Thus the reduction of the singular categorical to the hypothetical violates the very nature of hypothetical statement 'If any A is this A' cannot represent anything open to doubt; it is but the verbal form of an hypothesis to which no hypothetical thinking corresponds The same criticism obviously applies to 'if this A is this BC, it is P'. It is thus impossible to put the matter of a singular categorical proposition into an hypothetical form, which so far vindicates the categorical form as independent

The discussion has brought to light an important aspect of the hypothetical statement, namely, that it does not merely attach a quality to a subject under a condition, but leaves it open whether the condition is realized or not. That is the normal meaning of 'if', and by this meaning we distinguish the true hypothetical statement from the universal categorical.

§ 101. We have seen already a certain relation between the hypothetical and categorical forms in virtue of which a true hypothetical statement may follow from the truth of a categorical. How far are these forms dependent on or independent of one another?

It is easy to see that the hypothetical form presupposes the categorical or else it could not be understood Thus the categorical is prior in form. For the expression 'If A is B, C is D' implies that the meaning and use of the forms 'A is B' and 'C is D' is already understood. The converse is not true. The

categorical form is intelligible in itself and does not for its employment presuppose that we already understand the hypothetical.

Does the hypothetical statement then not only presuppose the categorical by its very form but itself also contain a categorical element? If it does not, how can we call it a statement, for it will not satisfy the condition which we have hitherto assumed as obvious, namely, that there is no statement or proposition unless something is definitely stated of something else. Now in the form 'if A is B, C is D', B is not assigned definitely as the predicate of A, nor D of C Neither of these pairs then constitutes the true subject and predicate which make these clauses together one statement corresponding to one judgement, opinion, &c. We must ask what is decided in the act of thought which corresponds to such a statement In all hypothetical affirmative statements the affirmation which must be there to make a statement at all is that the consequent is the necessary result of the antecedent. This is a categorical statement, one in which the predicate is attached to the subject without any condition. This is offered not as an arbitrary or possible reduction of the hypothetical form, but as the statement of what it is in the complex hypothetical sentence which really makes it into one statement, representative of one judgement, opinion, &c. The hypothetical form then cannot claim to be a distinct form co-ordinate with the categorical in an ultimate logical analysis. The supposed difference between them, as represented in that definition of them with which we started, is due to a comparison of hypothetical and categorical forms in which the subject and predicate are only in appearance the same. Just so the modal distinction of propositions was, we saw, due to a comparison of statements whose subject and predicate were only in appearance the same.

We may also see that this is true by various modes of logical analysis, if we take predicate in the sense of 'logical' predicate. Thus if our question had been about the nature of C, C would be the logical subject in the statement 'C is D if A is B', and we should affirm that C is such as to be D if the condition holds that A is B; that is, we attach a complex predicate (in the logical sense of predicate) unconditionally to C. Or suppose the context were such that the antecedent itself was the subject.

If the question were: 'what follows if A is B?', we should in 'C is D, if A is B' attach the consequent unconditionally to the antecedent A is B, and the tone in which we pronounce the clause 'C is D', as contrasted with that in which we say 'A is B', indicates that 'C is D' is the predicate.

§ 102. Hitherto we have for convenience described the elements in the hypothetical statement, which are conceived as necessarily connected, by help of the grammatical forms which correspond to them within the sentence, that is the antecedent and the consequent But what do these exactly represent? A common view is that in the statement, 'if A is B, C is D', a relation between two 'judgements' is affirmed, viz. that the judgement A is B necessitates the judgement C is D, and indeed that is one way in which the hypothetical judgement is supposed to be reduced to the categorical. This is entirely erroneous. In the given form, A is B and C is D do not represent judgements, simply because they are not judged. We are uncertain whether A is B, provided the particle 'if' is used in its normal and proper meaning; that is, when the statement is a true hypothetical. So we do not judge that A is B, and the words 'A is B' (which occur we observe not independently but only in connexion with the 'if') do not represent a judgement at all Being uncertain then whether A is B, we are so far uncertain whether C is D, and so the words 'C is D' do not represent a judgement either. If 'A is B' really represented a judgement, we should be able to say, *ex hypothesi*, 'because A is B, C is D'.

It is a question or a problem to us whether A is B, and a question whether C is D, and the hypothetical sentence states a relation of a certain kind between these problems, grounded on our knowledge of the realities to which they relate The statement is that the question whether A is B is a case of the question whether C is D, and it may easily be shown that this entirely accounts for the inference which can be made from such a statement. Or, to put it in a manner which accords more with the actual expression, the form of statement (not the statement) A is B necessitates the form C is D [1]

[1] This subject, as well as that of the Disjunctive statement, is discussed more fully in Part III, chs 5 and 6.

In the general form 'if A is B, C is D', the hypothetical clause does not refer to what is only hypothetical; there must be in it elements known to be real. What is unknown and indeterminate is whether they can stand in a certain relation, for instance, A and B may be known to exist, but we may be uncertain whether B can be attributed to A. Now the hypothetical form becomes possible because we assign definitely to the hypothetical condition or antecedent the result or consequent C is D How can such an antecedent acquire such a consequent at all? The answer is: only because we can connect categorically, i.e. non-hypothetically, with the elements whose existence we are sure of (A and B) some other elements of reality, or, more accurately, can apprehend such a connexion. And it is in virtue of this relation of the known elements in the hypothetical clause to certain other known elements in reality that we get the consequent as the result of the antecedent. Suppose, for instance, we know in reference to A and B, that α necessitates A and that B necessitates β. Then through that knowledge (which is non-hypothetical) we are able to say what is the result *if* A is B, namely, that α is β, and we can see that the reasoning by which we get this consequent from the antecedent (if A is B, α is β) always consists in recognizing the necessary non-hypothetical consequences of real and non-hypothetical elements.

Consider for instance the *reductio ad absurdum* proof. In this it is 'assumed'[1] that two real elements stand in a certain relation. We then argue from what each of these real elements separately necessitates and so get a statement hypothetical in form, namely that, if the real elements are in the supposed relation, certain other real elements must be in a certain relation. Now we know otherwise that these last cannot stand in the given relation. Thus our assumption is seen to be impossible. Here we notice that in a very important sense we do not argue from an hypothetical conception at all (contrary to the usual representation),[2] for in accordance with the distinction we have

[1] Thus use of the word 'assumed' is discussed in §§ 296 and 312

[2] It is not difficult to show that the main fallacy of 'non-Euclidean space' is a complete misunderstanding of hypothetical thinking and more especially of the hypothetical 'conception' Vide Part III, ch 7 Another fallacy in it is noticed in § 320.

already made it is not a conception in the proper sense, but a problem or question, and the very result of our argument (the *reductio ad absurdum*) is to show not merely that such a conception is objectively invalid but that we cannot have the conception at all, since the supposed connexion is shown to be unthinkable. Now we obviously cannot argue from what we have not got.

The hypothetical statement then is an inference, and an inference in non-hypothetical argument.[a]

§ 103. Our general conclusion then is that the categorical statement cannot possibly constitute a *species* of statement, because all statement as such is categorical. The expression of every definite judgement, or opinion, &c, is a categorical statement in the sense that a connexion between two somethings is affirmed absolutely and unconditionally The categorical statement which expresses an hypothetical judgement, or opinion, states absolutely a connexion between two problems or questions about reality. The categorical statement which expresses a non-hypothetical judgement or opinion states absolutely a connexion between realities.

The doctrine then that the categorical statement cannot be reduced to the hypothetical strictly means that a given non-hypothetical statement cannot be reduced to an hypothetical. And we may obtain another proof of this doctrine from the account we have given of the nature of hypothetical statement. For obviously the statement of the connexion between realities cannot be reduced to a statement of the connexion between problems. We must also withdraw the concession that the hypothetical statement (e g if anything is A, it is B) can be *derived* from the non-hypothetical, all A is B, for this is inaccurate. All that is true in the supposed derivation or reduction is that if the non-hypothetical is true, the hypothetical is true also. The one cannot properly be said to be derived from the other because the hypothetical implies the uncertainty whether there is such a thing as A, whereas the categorical implies that this is not uncertain but certain, and obviously we cannot derive the uncertainty of a thing from its certainty.

§ 104. The non-hypothetical statement 'all AB is C' only entitles us to attribute Cness to A under the condition Bness;

[a 'The hypothetical judgement is always an inference.' Bradley, l c, II, p 407]

it does not convey the information whether or not Bness is a *necessary* condition, and therefore is so far compatible with all A is C. The same is true of the hypothetical form, if A is B, A is C. For this does not exclude the possibility that A may be C, even if A is not B. In both therefore there seems to be the same ambiguity, and this remark applies also to the conditional form (whenever A is B, A is C), which as such assumes that the condition exists It may reasonably be objected that we must here attend to the normal use of language and that the intention of an hypothetical proposition is to state that an A requires, as far as we know, to be under the condition of being B, in order to be C. And so in the non-hypothetical form all AB is C, for here again, the normal meaning is that we cannot attach Cness to A without the condition Bness; otherwise we should say A is C. It nevertheless remains true that even in this normal use of language there may be an ambiguity. When a man says all AB is C, he ought to mean that, so far as he knows, A is C not *simpliciter*, but under the condition B. But now B may contain more than the necessary condition and therefore it does not follow that the A which is C must necessarily be B This kind of ambiguity may correspond to the speaker's own uncertainty; for instance, in experimental science, we may find that an A which was without the attribute Cness gets that attribute when we introduce the condition Bness We are therefore entitled so far to say AB is C; but yet we may be unaware how much of B is necessary and may have to proceed to new experiments in order to eliminate everything except the true condition.

Curiously enough,[a] this ambiguity is found in the exact demonstrations of mathematical science. It might seem that this was not possible, that if we demonstrated the property D of ABC, where D depends on A alone, we should derive D from A. But this is by no means always the case. A mathematical proof often enough derives D from the whole nature of its subject as expressed in its definition, or at least from more than the element A. The reasoner is not aware that he has introduced

[a 'Mathematicians do not seem to have noticed this and it came as a surprise to B B, when I mentioned it to him.'—*MS. note* Cf Part V, xiv, to B. B 7 IV 09; from B B. 10 IV 09]

anything superfluous, while the examination of the argument will not always show the superfluity. For instance, the harmonic properties of the circle, for the demonstration of which its whole definition is used, yet follow from a generic element which it has in common with other conic sections, a fact which can be established by a different method of proof; but, though this is so, the generic element forming the definition of a conic section cannot be discerned in the definition of the circle used in the given proof, nor anywhere in the proof itself.

§ 105. The hypothetical statement, as a general form, just like the universal categorical, cannot be converted simply. From 'all AB is C' we cannot infer that 'all C is AB', nor can we from 'if A is B, A is C' infer that 'if A is C, A is B'. We shall show hereafter in dealing with inference that the reason lies just in the ambiguity with which the condition is expressed.[1] When the true or exact condition is stated, whether in the categorical form or the hypothetical, either can be converted simply. Thus 'all AB is C' can be converted into 'all C is AB', provided that AB is the sufficient and necessary condition of C. Now, if this be true, since an accurate scientific proposition should state the condition without the ambiguity, should give, that is to say, the sufficient and necessary condition, it follows that a scientific proposition, though it may be true, is not perfectly accurate in form, unless it can be converted simply. This may be at first unexpected, but mathematical demonstrations present continual examples of it, and it is a test which every perfectly accurate proof [a] must satisfy, that we should be able to convert the conclusion. And if in any case we are unable to convert the conclusion, this is proof that the conclusion has not been drawn from the accurate condition, in other words that the condition states more than is necessary. A consequence of this principle would be the denial of the 'plurality of causes'.[2] The vindication of the principle itself will be reserved for the theory of Inference.

NOTE. The treatment of hypothetical statement in these sections requires to be supplemented by the lectures specially devoted to hypothetical thought; [3] but on reflection I must

[1] § 259 [2] §§ 352–3. [3] Part III, chs. 5–7.

[a] Cf. § 259. This is true only with the proviso 'sufficient and necessary'.

admit it to be a defect that only that sense of hypothesis is discussed here which corresponds to the ordinary meaning of the term 'scientific hypothesis', and no notice is taken of the case where we know or believe that the condition stated in the hypothetical clause is not realized—e g. 'if he had known what would be the consequence of consenting, he would not have done it'. This case is directly but not sufficiently considered in the other set of lectures, a defect I intend to remedy.

I should like here to explain that the omission does not mean acceptance of the doctrine held by some thinkers that the statements in question are not true hypotheticals. At present I must be content to say that such a view does not realize the full difficulty caused by the fact that the only natural way of expressing them is in the hypothetical form, with the particle 'if' expressed or understood, e g 'if A were B (as it is not), C would be D'. Any other mode of expression would be very difficult, and would strike us at once as artificial. It seems also to be quite forgotten that a *reductio ad absurdum* proof is often an instance of the kind, because the condition introduced by the word 'if' is not conceived and cannot be conceived as possible, and yet from Aristotle onwards these statements with such clauses have been held as prominent types of the merely hypothetical Finally the form 'if A is B, C is D', which is the proper form for the case where we are uncertain whether A is B, and the form 'if A were B (as it is not), C would be D', have this essential in common that in both cases A's being B would be held to be something conceived merely and not represented as known to be real though what this exactly means requires careful discussion, and ought already to have been taken account of in the present investigation.

XII

NEGATION OR THE QUALITY OF PROPOSITIONS [a]

§ 106. HITHERTO we have treated only of the affirmative forms of statement. The negative presents difficulties both in metaphysics and logic. As is well known, negation was a source of puzzle as early as the beginning of philosophy in Greece. Of this philosophy it is perhaps fair to say that the difficulty it had with negation arose from the fact that when once the idea of negation has created a substantive form in language it tends to pass into a positive conception. Not-being comes unconsciously to be treated as a kind of entity. One result of the metaphysical difficulties is seen in the Eleatic philosophy and in the nature of the philosophy which succeeded to the Eleatic. Parmenides found it necessary to maintain that only being existed and that not-being could not exist. That he should have found this apparently tautologous statement important is significant. Negation must have caused some very serious difficulty. Parmenides argued against the dividedness of being that division would involve somehow the intervention of not-being between the divided parts That would give the intervening not-being a title to reality He probably had before his mind an image of material objects in space with empty space (or as the phrase is 'nothing') between them He did not however infer that we are mistaken in speaking of empty space as nothing; he seems rather not to have questioned the position that empty space is properly not-being. The only alternative left him was to deny such empty space He might then alternatively have said that the world of sense is really full, though this is not apparent to the senses, or that the world of sense is an illusion because it presents to us empty space. He chose the second The philosophers who followed did not accept this denial of the sensible world but were sufficiently affected by the reasoning of Par-

[a The chapter is headed 'Ibant obscuri ⟨sola sub nocte per umbram, Perque domos Ditis *vacuas* et *inania* regna'. *Aen.* vi. 268⟩. *MS. note.*]

menides and his disciple Zeno to believe that empty space was somehow impossible and involved the ascription of existence to non-being. Thus Empedocles and Anaxagoras supposed space to be entirely full, accounting for motion by the hypothesis that the apparently empty space was filled by very small particles which were able to move because the particles in front of them moved away Continuity was preserved because the place of a particle which moved was immediately occupied by another. Motion in the universe was like the motion of the particles of a fluid within itself Leucippus and Democritus, if correctly reported, appear to have reverted to the older view, allowing the existence of a 'void' as well as a 'full'. The important effect of Eleatic speculation and the hold it took upon Greek philosophy is shown by the fact that even Plato in his scientific explanation of the physical world, in the *Timaeus*, retains this doctrine in a modified form. He himself however made a contribution to the theory of negation in the *Sophist*, by pointing out that not-being often means *relative* not-being, something that is which has a being of its own but not some other kind of being Thus Plato showed how in that sense there is no gulf between being and not-being One kind of being involves another, i.e. its own not-being One kind of being has its own being which is not that of another; every kind of being involves its other, i.e relative not-being This is the familiar modern doctrine *omnis determinatio est negatio.*

The student of Plato must however notice that, in the *Republic*, not-being, the extreme opposite of being, with the 'intermediates' lying between, is not the relative not-being of the *Sophist* It is the absolute negation of any kind of being, the correlate of ἄγνοια (not-knowing). This is not ignorance in the ordinary sense but mere absence of consciousness. The not-being of the *Sophist* is obviously an object of knowledge (in its widest sense) Thus the ancient difficulty was metaphysical rather than logical and arose mainly from the question whether anything objective corresponds to negation. The logical difficulties relate to the form as such; for instance, whether it is a different species from the affirmative, or whether the latter is in some sense the form of all statement; and again whether the negative symbol belongs to the so-called copula. Difficulties

arise also about the negative conception which are not purely logical. Certain of these hardly appear in Plato and Aristotle, and even in modern times we observe an unconsciousness of some of them. Thus it is usual to divide [a] propositions or 'judgements' into affirmative and negative, without even asking what is the genus of which they are the species. To say that in judgement (or in a proposition) something is affirmed or denied of something else is the elementary fallacy of defining by an enumeration of species instead of a statement of the genus. The difficulty is lost sight of in a definition which enumerates the two.

We shall maintain that the negative proposition is a distinct species and cannot be brought under the general affirmative form, and shall try to determine the general characteristics of statement as common to the two species

We shall further maintain that the affirmative and negative forms involve one another, and that, though distinct, they are not properly co-ordinate, the affirmative being prior

As regards the metaphysical questions we shall argue that negation is not merely subjective but belongs to reality. Finally, we shall discuss certain special difficulties presented by that negative statement in which the negative does not imply, even indirectly, a positive determination of its subject, but its entire non-existence

§ 107 The negative statement with the verb 'to be' can in appearance be reduced to the affirmative by omitting the negative with the verb and putting a negative expression, in the form of an adjective or common noun, into the attributive, so that '$(s)_1$A is not B' becomes '$(s)_1$A is not-B' or '$(s)_1$A is a not-B'.

Now if we treat the negative and affirmative as two different species, there arises the problem of finding a form to represent that which is common to the affirmative and negative statements. This cannot be '$(s)_1$A is B', or '$(s)_1$A is not B', since the common genus cannot be either affirmative or negative. Thus to overcome the difficulty which meets us, if we are looking for something analogous to these formulae, we might possibly be tempted to suppose that the affirmative is the true generic form

[a e.g. Mill, *System of Logic*, I. iv, §§ 1 and 2]

and that the solution is to reduce the negative to the affirmative in the manner described. It will be necessary, therefore, to consider the meaning of the verbal transformation by which the negative statement is in a manner reduced to an affirmative form.

In the first place, there is a very important difference between the new quasi-affirmative and the ordinary affirmative; the negation is not eliminated after all, and the statement does not as such give any information of a positive character about its logical subject or the subject of attribution In consequence it does not give a further positive determination to our conception of these subjects, like the ordinary affirmative statement. In some exceptional cases it may seem as if this were really possible; thus 'five is not an even number', 'five is a not-even number', 'five is an odd number'. But now 'odd' is as positive as 'even'. This however is made possible not by the negative statement itself but by something else which we know about the particular matter in hand The affirmative statement, five is an odd number, is really an inference from the negative five is not an even number combined with another and that an affirmative statement, namely that all number is either even or odd. This is not of universal application because we cannot always get such an affirmative disjunctive premiss If I say, 'this man is not a Mohammedan', I cannot thereby determine his religion, nor even that he has any at all

What is characteristic of the quasi-affirmative form to which the negative proposition is reduced is the expression, compounded with a negative, which is made to do duty as an adjective or common noun and has the grammatical form of one. This quasi-adjective of the form 'not-B' is often supposed to have a something corresponding to it called not-Bness, just as Bness corresponds to the true adjective B. Bness is a kind of being and so objective; but, as it is a universal, it gets called, in the inaccurate conceptualistic phraseology which is so prevalent, a conception or a concept. Similarly the assumed not-Bness is called a negative conception or concept, and is treated, in effect, as if it were a universal.

We have then to examine the negative expression not-Bness and ask whether any true universal corresponds to it, whether

it is not rather only a verbal form like that of a universal. Can we in fact in any reasonable sense of 'conception' say either that it is a conception or that there is any conception of it? And again does it serve to transform a negative proposition into a real affirmative?

§ 108 [a] It is true, and a commonplace, that the recognition of a positive character in anything involves acts of comparison with that which is not itself, and so far involves negation; so that to recognize anything as of a definite character means distinction. We recognize some feature in the thing which enables us to identify it as one among other things with which we do not confuse it. But now we do not know a given something as merely contrasted with something different, but by what we call its own nature, through which alone the contrast is possible; and thus the sweeping statement *omnis determinatio est negatio* [b] is misleading, for it is (taken strictly) an identification of the determinate and definite with the negative, and apparently at all events an objection to any distinction between them But the negative itself depends for any definiteness it can have upon the positive definite character of the contrasted positive elements.

This leads to an important distinction between the (supposed) merely negative notion and the positive, although the latter, as we have seen, involves negation. If we allow the ordinary way of speaking about conceptions, we may say that the positive conceptions get their negative side by contrast with other positive conceptions, by contrast, that is, with conceptions as positive in themselves as the former, and these in their turn are not known as merely other than those which we are contrasting with them So we may rightly say that we distinguish these from one another by their own positive nature, by what they are and not by what they are not Now with the supposed purely negative conceptions the case is exactly the opposite; the negative conceptions can only be distinguished from one another and have only an individual or distinct character through what they are not, or more accurately through a definite positive

[a 'Rewrite all this with a view merely to "conception" and phrasing'. *MS note*

b Usually but mistakenly ascribed to Spinoza]

something which the objects they concern are *not*. In fact to every so-called negative conception such as 'not-Aness' there corresponds an indefinite sphere, consisting of what is not A, which could not be dealt with at all except through the definite and positive 'conception' Aness, exclusion from which constitutes the meaning of the negation. Thus 'not-A' and 'not-B', 'not-Aness' and 'not-Bness', can only be distinguished from one another through 'Aness' and 'Bness'. This is one way of showing that the so-called negative conception 'not-A', if it existed, could not be equated to or identified with any positive conception whatever.

If we discard this application of the terms 'conception' and 'concept' and use language which seems to suit the facts, we may say that whereas Aness and Bness are distinguished by what they are, the supposed not-Aness and not-Bness could only be distinguished by means of the distinction between Aness and Bness, that is by what they are not Thus the statement '$(s)_1$A is a not-B' remains essentially distinct from a statement of the affirmative form '$(s)_1$A is C', and is indeed dependent on this affirmative for its meaning

It seems then that if there were such a thing as a negative conception not-Aness, it could not be equated to a positive one; but we may ask whether in the proper meaning of conception there is any true conception at all corresponding to the verbal form not-Aness.

The conception of Aness, when it is not what we shall call a problematic conception, is the apprehension of Aness Can there be something not-Aness present in all the instances of what is not-A, which are each said to be a not-A, and can it be a true universal, and apprehended as such? The universal is something common to all its particulars, and the only thing common to all the so-called not-A's is existence, since not-circle for instance includes a triangle, a sound, a theft, and so on *ad infinitum*. But existence is not the same as not-Aness, so that not-Aness is not the universal common to the not-A's

We have, of course, to meet the objection that, while the not-A's have nothing positive common to them except being or existence, they just have the negative not-Aness common to them

all, since each is a not-A. Suppose then not-Aness (='not-being-an-A') were a true universal. A true universal can only exist in certain forms called its differentiations which its own nature necessitates These are species in the strict sense and the given universal is their genus. Thus a line must be straight or curved, and linearity of itself necessitates the existence of rectilinearity and curvilinearity as forms in which it must exist. 'Equilateral four-sided figure' on the contrary is not a differentiation of equilateral figure; for four-sidedness is not necessitated by equilateralness but by the universal 'figure' of which it is a differentiation.

On the other hand, if a universal can only exist in certain forms, these will be its differentiations and true species. If a given something is not A, and so accounted a not-A and a particular of a supposed universal not-Aness, it is a not-A not as a mere negative but as having a positive quality or nature Bness different from Aness, and only because it has such a nature. Thus its not-Aness will consist in its Bness, and not-Aness only exists in it in the form of Bness; and, in general, not-Aness can only exist in the form of the positive universals Bness, Cness, Dness, &c, which are such that their particulars are not A. It follows then that each such positive universal as Bness must be a differentiation of not-Aness and a true species of it. But this is impossible. The whole nature of the species-universal is comprised in the genus, taking genus and species in the strict sense. There is nothing in the quality of the species which does not belong to that of the genus and is not involved in it as being a necessary form which the genus must take in existence. Thus there is nothing in blue but colour, and blue is one form which colour as such must take There is nothing in rectilinearity which is not linearity. rectilinearity is one necessary form of the being of linearity In this way the universal constitutes the whole nature of its species or differentiation. Hence whatever Aness and Bness may be, provided they are different so that a B is not an A, not-Aness would have to comprise the whole nature of Bness. But this is impossible. for not-Aness is simply the absence of a certain quality and mere absence of a positive quality cannot constitute the whole nature of any positive quality. If we turn from symbols to real instances the absurdity

is manifest. We should have to say, for instance, that theft was a species or kind of want of circularity and circularity a kind of absence of theft, or that the whole nature of theft was comprised in want of circularity.

Contradictions also may be developed. If Aness, Bness and Cness are all different in the sense that every A is not B, every B not A, &c., it would follow as before that Cness was a species of not-Aness and at the same time a species of not-Bness But, if a universal is a differentiation of two different universals, either these two are related themselves as true genus and species or they mutually involve one another so that each necessitates the other. Thus though not-Aness and not-Bness exclude one another, either one is a species of the other, or each involves the other, but both these alternatives are self-contradictory There are further absurdities in the two cases In the latter case not-Aness and not-Bness can only necessitate one another if Aness and Bness necessitate one another (in the sense that every A is B and every B is A), since the negations, as we have seen, can only be related through the positive elements of which they are the negations This must be true whatever Aness and Bness may be, so long as they differ from Cness in the manner described This is absurd, for then, to take an example, since a circle is not a sound and not a theft, a sound would have to be a theft and a theft a sound In the other case where not-Aness must be a differentiation of not-Bness or *vice versa*, there could be nothing to determine which was the true alternative, and each would have to be a differentiation of the other But this again is a contradiction These contradictions would occur in the case of any two positive universals whatever which exclude one another in the given sense, because a third universal can always be found which excludes both For instance, a theft must be a kind of circle and a circle a kind of theft.

The mistake committed in making not-Aness a universal (or a 'concept') is the fallacy of treating the difference of one quality from another as if it were itself a quality, like the qualities which differ, and belongs to a familiar class of mere verbal fallacies in which things are put in impossible relations to themselves. Relations more especially are treated in effect as if the same in kind as the terms related, with the general result of

producing impossible unending series.[1] In the present case this sort of absurdity arises as follows. Since the quality Bness excludes Aness, this relation of the two is taken itself as a quality called 'not-Aness', and Bness becomes a kind or species of not-Aness. But now not-Aness, taken thus as a quality, is a quality which excludes the quality Aness. Hence, as before, this exclusion in turn is not-Aness and, as before, not-Aness becomes a species or kind of not-Aness, that is a species of itself. Not-Aness then being a species of not-Aness, it is a species of a species of not-Aness, that is a species of a species of a species of not-Aness and so on without end.

§ 109 Consider now not-Aness from the side of apprehension. Not-Aness cannot be apprehended as mere negation, for the mere negation of anything contains nothing to apprehend. If it is objected that we do apprehend not-Aness or absence of Aness, because we apprehend that something is not A, it must be replied that this is not the apprehension of mere not-Aness, but the apprehension of a positive something the nature or quality of which, for instance Bness, is different from Aness It would hardly then be replied that mere absence of Aness can be apprehended, when there is nothing but absence of Aness, for that would be to confuse the absence of an apprehension with the apprehension of absence. It being then impossible to apprehend mere not-Aness or mere difference from Aness, we must in any negation of Aness apprehend something positive, of a nature Bness different from Aness, thus the apprehension necessarily includes that of Aness and that of Bness. That is, the only possible apprehension of the negation of Aness is in the apprehension of Aness together with the apprehension of a quality, say Bness, different from it, and the apprehension of each as different from the other[2] The apprehension is of two different qualities and not of a quality of difference.

[1] These fallacies are sometimes taken very seriously Thus in a well-known book the general mistake about relation (which can be easily exposed) is made part of the basis of a metaphysical theory, and the mere tangle of a verbal fallacy is quaintly taken to be a sort of self-contradiction in the nature of Thought itself [Vide Part V, §§ 433–7]

[2] This latter apprehension is a part of the former, and not something added to it For Bness being different from Aness we necessarily apprehend this when we apprehend both Aness and Bness, otherwise we should confuse it with

It may be objected that though not-Aness, or difference from Aness, can only be apprehended in the apprehension of Aness and Bness, and of Aness and Cness, &c, yet the apprehension of it may be distinguished from the apprehension of them, and it can be apprehended as a unity in the difference of Bness from Aness, and the difference of Cness from Aness, &c.; in short that a relation, e g equality, can in general only be apprehended along with the apprehension of the terms related, and yet that this does not prevent our abstracting it from them, and apprehending it in abstraction as a unity in the different instances. But such abstraction is not always possible. One quality may so depend upon and presuppose another that it cannot possibly be separated from that other by any kind of abstraction For instance, straightness can only be straightness of a line and cannot be apprehended apart from linearity or in any abstraction from linearity Thus there is not, properly speaking, any 'conception' of straightness in abstraction from linearity. So also oddness presupposes number. There is no conception of oddness in itself, in abstraction from number Such an abstraction could not be performed Similarly the negation of Aness can on the one hand only be apprehended as the difference from Aness of some positive quality, say Bness, and on the other cannot possibly be abstracted from such positive quality, just because negation is difference of positives.[1] Thus of not-Aness in the abstract, or of difference from Aness in the abstract, there is no apprehension or 'conception' whatever, any more than there could be of oddness or straightness in abstraction from line or number.

Further, with regard to the case first alleged (the abstraction of a relation like equality), it is obvious we cannot in our thought abstract the conception of any relation from the conception of the kind of terms it relates Of this general principle negation is a particular case But just as in the case of oddness we get a true universal and true conception by taking in the nature of number to which oddness belongs and which it presupposes,

Aness Thus there is no apprehension of the difference of Aness and Bness other than the apprehension of both Aness and Bness together

[1] This is in effect the Platonic doctrine, in the *Sophist*, that negation is 'otherness', but with the addition that there can be no conception of otherness in abstraction from positives which are 'other' than one another

could we not similarly in the case of not-Aness, by taking in the nature of the positive being to which not-Aness belongs and which it presupposes, get a true universal and a something which could be apprehended in abstraction? Is there not an abstract unity in fact, apprehensible as such, which could be called 'positive being in general which is not Aness'? We shall find that the analogy does not hold, and that there is again no reality to correspond to this verbal form of a universal.

We have to abstract from the not-Aness of special forms of being, such as Bness, Cness, &c, determined in each case by a positive character such as Bness and as inseparable from it as oddness from odd number, and have *ex hypothesi* to include abstraction from the positive natures of Bness, Cness, Dness, &c. Moreover this positive something, which is abstracted along with the not-Aness, must be one and the same in all the instances Bness, Cness, &c.

What will this abstraction be? The positive element cannot be positive being in general, for that would include Aness. It must be a kind of positive being somehow specially defined. But, as we have seen, there is no special kind of being common to all that which is not-A, nothing, that is, common to sound, triangle, theft and so on by which these are all not-circular. Thus the required abstraction cannot be found.

The matter may be put also in this way. The positive element which must be included in the proposed abstraction, as indicated in the verbal form, would have to be the special kind of positive being which differs from Aness. Now difference from a given something Aness can only exist as caused by the positive character of what is distinguished from the given something. Thus the distinction of the kind of being to be abstracted as being different from Aness must depend on some positive quality which it has Thus a positive quality must be common to all the being which is not-Aness, which however is impossible

This makes it evident what the fallacy of such an abstraction consists in. It is the endeavour to define a special kind of being by the mere fact of its distinction from something else, which is an inversion of the relation between definition and distinction. For it is positive definition (including the recognition of a positive quality which is *sui generis*) which alone makes possible a dis-

tinction of the thing defined from other things. Such distinction therefore presupposes a definition to explain it. The conclusion arrived at is attested by the fact that every one would think it absurd to institute any sort of inquiry into the nature of not-Aness as something common to everything distinguished from Aness, into the nature, say, of non-circularity as something common to a triangle and a theft For this fact would be unaccountable if not-Aness were a true universal,—were anything of which we could seriously be said to have any concept or conception, or which could itself be called in the ordinary confused phraseology a 'concept'.

The mere verbal fallacy of being misled by the artificial form 'not-Aness' into supposing that there is a universal not-Aness, or that there is a concept not-Aness, or that there is a conception or concept of it, has led to unworthy puzzles which have been gravely taken for philosophic truths It is excusable to find difficulty in getting at the exact nature of the mistakes in verbal fallacies, indeed it is often really difficult, but it is quite inexcusable not to see that they must be nonsense, and actually to mistake such infirmities of intellect for subtleties of metaphysic.

§ 110. Since not-Bness does not represent a universal, or kind of being, the reduction of $(s)_1$A is not B to the verbal form $(s)_1$A is a not-B cannot serve to reduce the negative statement to a true affirmative form However, it might be contended that the statement $(s)_1$A is not B puts $(s)_1$A inside the sphere of reality which is outside what is B, and that this gets verbal expression in fact in the form of statement $(s)_1$A is a not-B. Now it is quite possible that some one who chooses this latter form deliberately does intend that $(s)_1$ has some other place in the reality outside B and that may be precisely his reason for choosing it. This would at once suggest that he chooses this form because the usual negative statement has not naturally that implication That it has not got this implication is indeed the truth, the intention of the form being normally only to exclude $(s)_1$A from what is B and not at all to assign $(s)_1$ a place in reality. But more than this. It is not true that the negative statement as such, $(s)_1$A is not B, necessarily implies that $(s)_1$ has a position in that other sphere of reality at all; it is com-

patible with the statement that $(s)_1$A as $(s)_1$A has no being whatever. If I find that this page is not in my book, it does not follow that the page, as a page, is anywhere. The page may have been burnt, and, as a page, have absolutely no existence. 'The pain is not in my head now' means that the pain has no existence, not that it exists somewhere else. To avoid misunderstanding, we shall return to this sort of example in the discussion of statements which assert complete non-existence

To return, $(s)_1$A is a not-B at all events gives us no information about the position of $(s)_1$ in the infinite sphere of reality outside what is B Whatever $(s)_1$ may be positively remains unknown, since merely to put $(s)_1$ in this infinite unknown (for we are here to omit the only thing by which it can be known, namely, its exclusion from what is B), is to give it no positive determination of being whatever. We have already seen, in the example of 'five is not an even number', that when such a positive determination seems possible, it is only because we have combined with the negative statement a disjunctive affirmative which confines not-B to one or more definite positive realizations, thereby really limiting the sphere of not-B to a portion of the infinite not-B This is what is done in all eliminative arguments. In them we seem to arrive at a knowledge of what $(s)_1$ is by statements of what it is not. Yet these negatives only serve to give $(s)_1$ a positive determination because they cancel certain positive alternatives which are given to $(s)_1$ in a disjunctive statement. Thus, if $(s)_1$ is either B or C or D, the negatives, $(s)_1$ is not C and $(s)_1$ is not D, in combination with this disjunction, give us finally $(s)_1$ is B. This is an eliminative argument and is the analysis of what Bacon and his modern followers understand by induction

Finally, then, the negative statement taken by itself cannot give positive determination as the affirmative does. It remains essentially different in spite of the apparent reduction, which is merely verbal Moreover, although it is true that ordinary negative statements (e g. nobody in the next room can read Greek), like ordinary affirmative ones, normally presuppose the existence of their subjects of attribution, this existence is not asserted by the negative statement as such.

§ 111. It will save fruitless effort if we recognize at this point that we cannot profess to explain negation and its correlative affirmation. Negation and affirmation may be contrasted, but they cannot be explained or derived from one another, nor understood through anything but themselves. Anything given as the basis of such an explanation, to be intelligible, would have to presuppose the thing explained They are not in fact among the things to which the idea of explanation can have any application

[a] The most direct and adequate thing we can say if we wish to describe the difference between affirmative and negative statements seems to be this. An affirmative $(s)_1$A is B gives in its attributive a kind of being which the subject of attribution has, while the negative gives a kind of being which this subject has not Further, a negative cannot give a kind of being which the subject has without presupposing a strictly affirmative statement. Conversely, the affirmative cannot perform the function of a negative, and tell us what sort of being a subject has not, except by the assumption of negative statements. If I know $(s)_1$A is B, I do not know $(s)_1$ is not C, unless I have the negative statement 'what is B is not C'. Now both statements do somehow advance our knowledge and make our conceptions more determinate.[b] If then we merely define the affirmative statement as one which gives a further determination to the conception we have of the subject, that might be understood of the negative statement also Suppose I know $(s)_1$ as A, and wishing to extend my knowledge ask whether $(s)_1$ is B, or C, or D, so that $(s)_1$ is the logical subject The question implies that for me the conception of $(s)_1$ is indeterminate with respect to B, C, and D, and thus my conception of $(s)_1$ includes an unknown field of possibilities, being indeed so far problematic. Now when I arrive at $(s)_1$ is not B (in which logical subject and subject of attribution coincide) my conception of $(s)_1$ is more determinate on the one hand than it was, because a certain field of possibility is definitely excluded On the other hand it is more adequate to reality, for I no longer think it possible

[a 2nd para ' Rephrase all through where the word " conception " occurs ' *MS note* The reason for this will appear from Part II, ch xiv

b ' Alter *determination* language ', *MS note*, repeated at § 112]

that $(s)_1$ may have an attribute which it cannot have. It follows then that in the negative statement we have acquired a new determination for our conception of the being of its subject. We cannot therefore define the affirmative statement simply as giving such a new determination, for that will not distinguish it from the negative.

In this wider sense of determination, both the negative and the affirmative statement give a new determination of the conception of the logical subject and, generally, a conception of the subject of attribution different from that which is given of it in the nominative case. Further, the distinctive function of each is to give a kind of determination which the other does not give. Thus neither is a form of the other and neither is the general form of the statement or proposition. The general form itself cannot be symbolized by '$(s)_1$ is B' or 'all A is B' or '$(s)_1$A is B', or anything of that kind, any more than the universal of number can be expressed numerically, for such a universal cannot be either odd or even What then is the common form?

From the side of apprehension or conception it is simply the idea of a general determination for the given conception, which is brought about by the act, whether of knowledge or opinion, which finds expression in the statement. Now, in seeking a new determination of the logical subject, we must have before us some positive conceptions of a kind of being in relation to which the determination is to be got, and this determination differentiates itself at once in two ways either the being to which the positive conception refers belongs to the subject, or it does not The assertion of the first is the affirmative statement, of the second the negative

From the side of what is apprehended we may represent the matter thus. A given reality is definite and determinate, as opposed to having being in general or as opposed to some universal wider than itself, by having certain definite kinds of being and not having others Its determinateness therefore necessarily has these two aspects the positive one, of the being which it has, and the negative one, of not having the other kinds of being. An act of knowledge, whether judgement or not, is the apprehension of some determination of a thing other than a determination which we have already apprehended in it.

This is what determines the generic definition of statement of knowledge. As to the two special forms, the statement is affirmative if we apprehend another kind of being as possessed by the thing; that is, if we apprehend the positive determination, and negative if we apprehend some other kind of being as not possessed by it; in other words, if we apprehend the negative determination Opinion and its statement are to be treated analogously

Again, if the subject of attribution, that is, the nominative case to the verb, is not the same as the logical subject, it is evident what changes should be made in the above treatment so as to express the difference between affirmative and negative statement in terms of the subject of attribution, since in every case the statement gives in its attributive a different conception of the subject of attribution from that represented in the nominative case to the verb

§ 112. We have now to ask whether in view of this more general account adapted to both special forms of statement we can retain our previous distinction of logical subject and predicate, which was based on the affirmative form of the statement; and, if so, whether it can be made general so as to suit both the forms of statement

Let us take the case with the verb 'to be' as principal verb. In the first place, we may follow the analogy of the traditional usage according to which Bness is the predicate, both in the affirmative $(s)_1$A is B, and in the negative $(s)_1$A is not B, supposing $(s)_1$ to be the logical subject, but we shall have to alter our definition of predicate We may say that the predicate is that part of reality in relation to which the subject receives its new determination in our conception of it Then it will be Bness in both cases This includes our definition of the predicate in an affirmative statement, that Bness is the new kind of being assigned to the subject, if $(s)_1$ is the logical subject. But, secondly, we may define the predicate not as the positive part of being, in respect of which the new determination takes place, but as the whole of the new determination. (This, though it does not suit the traditional usage, really follows better on our usual notion of 'predicate', in virtue of which a certain difficulty[1]

[1] It is easy to show the confusion of the traditional logic in this matter

is always felt in calling Bness the predicate in a negative proposition of the form $(s)_1$A is not B.) If so, in the affirmative form of statement the words 'is B' really correspond to the predicate, and in the negative the words 'is not B'.

Here it might reasonably be objected that since the new determination, whether negative or positive, is represented as a determination of the being of $(s)_1$, and since we have maintained that 'is' represents the general being of $(s)_1$, we ought to retain this in our treatment of both forms and so make the predicates 'Bness' and 'not-Bness'. Then in a sense the negative would be reduced to the affirmative form Our reply would be that, even if we did this, we should not be making the affirmative the general form, for the general form would be divided into the two, in respect of their predicates 'Bness' and 'not-Bness', owing to that difference between them which we have already recognized, and thus would remain the general form as wider than affirmation or negation The sufficient answer however seems to be that this is not the normal meaning of the words in actual statements. In saying $(s)_1$A is B we do not think, in the general conception of 'is', of a mere general determination which may be realized as being something or not being something That is, it does not stand for the conception of mere determination in general, but we do think of it as the general form of being which is to be realized in Bness. And so again in the negative statement itself, we do not think of 'is' as being in general, to be presently differentiated into a negative form, to be differentiated, that is, into 'not-being'. On the contrary, we feel that the 'is' goes closely with B as representing a particular kind of being, and the negative word is intended to cancel that This is brought out by the fact that in speaking we cannot, in the negative statement of the form $(s)_1$A is not B, properly make a pause after the word 'is', for we do not do this normally unless we intend the 'is' to be followed by a positive determination Consequently, if in speaking we did stop at 'is', the listener would feel surprised if we continued the sentence as a negative, and indeed a special rhetorical effect may be produced in this way. Lastly, on the analogy of our previous assertion that in the affirmative, $(s)_1$ is B, the word 'is' represents the general being of $(s)_1$, while B represents

a special form which this takes, we may say that in the forms $(s)_1$A is B and $(s)_1$A is not B 'is' and 'is not' correspond to the general positive determination of $(s)_1$ and to the general negative determination of $(s)_1$ respectively. And in each case the particular form which the determination takes is given by the addition of B, which corresponds to the kind of being which gives determination to $(s)_1$, in the one case as identified with a part of, or with the whole of, the being of $(s)_1$, and in the other case as distinguished from that being.

It is not difficult to apply the above analysis to forms where the principal verb is not the verb 'to be', or to see what should be the analogous extension given to the distinction of subject of attribution and attributive This part of the investigation, however, requires discussion, which must be omitted for the present. We also reserve a consideration of cases where the nominative of the negative statement is the true logical subject, which present certain features peculiar to themselves.

§ 113. Though the affirmative and negative forms then are different, they involve each other and yet are not co-ordinate in the strict sense of the term.

[a] The affirmative statement $(s)_1$ is B involves a negative, for it is not intelligible unless B is distinguished from other elements in reality and this distinction would be matter of negative statement Again the negative in its very nature presupposes the affirmative We cannot, in an inquiry, arrive at the result $(s)_1$A is not B without first putting before ourselves the question whether $(s)_1$A is B, and at any rate the negative statement gets any definiteness that it has from the affirmative, for without that the negative gives no determination at all. The expression 'is not B' has its meaning too only as the cancelling of 'is B'. The affirmative then is in this sense prior, and it is prior also in order of time, for we cannot begin with mere negation. It is quite true that knowledge must begin with distinctions which involve negation, but it is also true that the negation is only intelligible here through the positive conceptions. To know anything about blue, I must be able to distinguish it from red

[a 2nd para 'modify', 3rd para 'alter a little in form', and 'in the order of time the negative cannot precede the affirmative for we can't begin with mere negation'. *MS notes.*]

and so perceive that blue is not red, but this distinction is only real for me, as opposed to the mere empty idea of distinction in general, through the positive character of the elements distinguished. It is only because of the positive characteristics of blue and red that one cannot be the other and that we recognize their distinction. Notice further that in the negative statement implicated in the affirmative the qualities incompatible with the predicate, or with the attributive of the affirmative statement, are not necessarily all known to us, and are at any rate not postulated in a determinate form. They cannot therefore condition for us the nature of the predicate or of the attributive itself. In the negative statement on the contrary it is necessary that the determinate character of the positive conception to which the negative form is opposed should be known, because it is only through this that the negative gains any meaning.

§ 114. All knowing and opinion which issues in affirmative and negative statement is subjective as the act of the thinking subject, but the significance of the act lies in its effort to apprehend objective reality. There are, however, reasons which may incline one to the idea that there is something specially subjective about negative statement; that the negative is something merely for us and not for the object, just as uncertainty and wondering are merely subjective The negative statement, deriving as it does its meaning from the corresponding affirmative, might seem subjective as representing our mere failure to pronounce the affirmative In an inquiry which ends in the statement $(s)_1$A is not B, we first ask whether Bness can be attributed of $(s)_1$A This consideration is obviously for the thinking subject only If we decide that we cannot affirm $(s)_1$A is B, that is the failure of an attempt of ours, and so may seem to be nothing for the object But such failure, though preventing us so far from saying that $(s)_1$A is B, does not justify the statement '$(s)_1$A is not B', the failure being subjective, the possibility remains over that another attempt might succeed. A more real difficulty is this: the negative statement may attribute non-existence, and such an attributive cannot correspond to reality; on the other hand, it is difficult to understand how something merely subjective could extend our knowledge, as propositions of this kind certainly do.

Let us first consider the case where not all existence is denied, but only a certain kind of existence. Now this simply means the recognition in the statement '$(s)_1$A is not B' of the distinction between $(s)_1$A and Bness, and the distinction is obviously objective. For, if we make it merely subjective, we should take all variety out of the real and end in a sort of Eleatic paradox, that being is one without any manner of difference.

Often the distinction between two elements of reality is not merely stated but elucidated positively by statements of the points of difference, but in negative statement proper the fact of difference is just stated without saying what it consists in. Even when the latter *is* stated, the elucidation of the points of difference may have to end, if everything is fully expressed,[1] in such bare negation as 'Aness is not Bness'. Thus we say 'these two flowers differ in colour', one being blue and the other red. But of blue and red we could only say 'blue is not red' and 'red is not blue', and not what constitutes the difference between them as we perceive them.

§ 115. The ordinary negative statement therefore '$(s)_1$A is not B' concerns two elements which belong to reality, $(s)_1$A and Bness, and it states that the nature of $(s)_1$ is different from Bness. Thus $(s)_1$ being excluded from what is B, however much we increase the sphere of B, provided it does not become large enough to include all reality, the negative statement can retain the characteristic which we claim for it. But when the difference between B and all reality vanishes, it seems as if the same account could no longer be given. We haven't now a distinction between two realities, for the statement means that $(s)_1$ is not real at all. When Bness then is thus extended to cover the whole of reality we arrive at a kind of limiting case of the negative statement.

To solve our difficulty we need but refer to what was developed in the discussion of the 'copula'. If it be said that '$(s)_1$A is altogether unreal' states a relation between reality and unreality, and so gives a kind of being to the non-existent, it seems enough to reply that there can be no such statement because $(s)_1$A would have to be a mere word without any thought even to

[1] See the discussion of the natural expression of negative thinking, § 117.

correspond. This in a sense is the true answer, but it requires elucidation. There are statements where we cannot be quite certain at first that any thought corresponds to their subject, and such statements actually occur in the exact sciences. $(s)_1$A contains thinkable elements, which however cannot be thought in that unity which the verbal form implies for them. The negative statement which verbally seems to deny all reality to the complex $(s)_1$ only denies that the aforesaid elements can stand in the given unity, it does not deny reality to the elements themselves Let $(s)_1$ be A and B and let the statement be that $(s)_1$ is impossible and unthinkable. Aness and Bness will be real elements and the statement $(s)_1$AB is impossible will simply mean that an A cannot be B. The exceptional form of the limiting case thus disappears and we recover the normal form of the negative statement

Lastly, as to the complex subject itself, it seems as if there should be a conception of it, if it is the subject, and yet since the conjunction AB is impossible, even for thought, there is no conception in the true sense. This difficulty again is solved by a distinction already made between a conception in which the elements are thought or apprehended and their connexion also thought or apprehended, and that form in which we think the elements but, instead of thinking the nature of their connexion, have only before us the problem or question whether they can be connected This latter kind of conceptions may be conveniently called ' problematic ', on the analogy of the problematic statement By this distinction we can understand how it may be possible to begin with a seeming conception of $(s)_1$AB and yet to discover that no such thing as $(s)_1$AB is even conceivable. It is the want of this distinction between the definite or determinate conception,—the conception in the proper sense,—and the problematic conception, which is largely responsible for the difficulties familiar both in ancient and modern times about non-existence (or not-being) and the impossible, and about the contrast of the merely imaginary with the real.

We have been considering instances in which the elements supposed to be combined in $(s)_1$ presented either at first or after investigation an obvious contradiction; there are, however, statements of a more usual character which seem to affirm

non-existence and where we should not say that the grammatical subject represents something never existent or wholly inconceivable.

Take such a one as 'the partnership of A and B is no longer in existence'. The characteristic of such an example is that we cannot call the partnership inconceivable inasmuch as it once existed. The statement expresses the fact that A and B are not now partners, or in the relation of partnership this is the ordinary negative, and falls under the rule which we have given. But we may treat the example otherwise if we use reality in the wide sense as including the past and future as well as the present, a meaning represented by the tenseless use of the verb 'to be'. The partnership, being in the past, belongs generally to reality, is an element in reality, and in the negative statement we distinguish the time of its existence, a real time, from the present time. Here then again the account holds that we are distinguishing one part of reality from another [a] When I say 'page 40 is not in my book', if it exists no longer as a page, the same account may be given of it as of the dissolved partnership. We observe, however, that in this extended meaning of existence or reality, even if the page as a page is no longer existent, it might be said that the statement implies that the page is in the sphere of reality which is other in place than this book now, whether other in time or not But nevertheless in making such a statement we are not thinking of this general sense of existence, but of present existence, and our statement does not necessitate that the page should be in the sphere of present existence outside the book In any case, the intention of the statement is not to declare that the page has any kind of existence but to distinguish it from a certain kind of existence

§ 116 [b] From the standpoint we have now reached we may appropriately consider the true nature of the so-called 'imaginary quantities' in mathematics Suppose in a given problem we are asked what quantity can satisfy certain conditions It may happen that there is no such quantity, and that to assume it

[a] 'When I say "page 40"' 'Reconsider'. *MS note*

[b] This is one of the sections the final position of which was doubtful The author thought of putting it at the end of Part III and before 'Induction'. I think he printed it here to liberate his soul Cf pp cxii–xiii]

would be to assume an impossibility. The problem may be expressed in the form of an equation with the unknown quantity sought for represented by a symbol as x. The calculus can only show it impossible that there should be such a quantity by conducting to an operation which we recognize as impossible, e g. $x = \sin^{-1} \frac{a}{b}$, where $\frac{a}{b}$ is greater than unity and therefore x is determined to be an angle whose sine is greater than unity, or again $x = \sqrt{-1}$. Such results are answers in the negative and assure us that no such quantity can be found; but they have a value and function beyond that. It is found that calculations can be made from these impossibles which lead to correct results. Thus they are not mere negations but have a positive character. If we equated them to zero we should get a twofold false result. In the first place, to equate x to zero does not show that what we are seeking is impossible Zero in the problem may refer to quantity measured in some definite way and, if the quantity sought is the distance of a point from a given point, e g. from the 'origin', the answer $x = 0$ does not mean that the position of the supposed point is impossible, and so that there is no such point, but that its position is the same as that of the given point or 'origin' itself. Secondly, if we equate impossibles to zero, we thereby equate them to one another, and the result of this in algebra would be that all real quantities would have to be equated to one another In the calculus itself these impossibles are otherwise found to differ from one another, which is enough to prove that they cannot be regarded as mere blank negations, a mere answer 'no' to the question proposed in the problem.

Thus it looks as if in unreality itself we were able to distinguish elements different from one another, and so the realm of unreality seems to have gained a kind of being. Now this gets expression in mathematics in so far as mathematicians have long been accustomed to call these impossible quantities (rather 'impossibilities of quantity') 'imaginary' quantities, and all true quantities, in distinction from them, 'real' quantities. The nomenclature itself is unfortunate, for, as we shall see in the examination of geometrical reasoning, it is only by what might be called the test of the imagination that the mathematician can decide at all whether any geometrical relation is real. Thus

there is a grave implicit contradiction. Besides it is characteristic of such quantities that they cannot possibly be imagined. Yet clearly the erroneous distinction is intended to save these expressions from being treated as mere 'nothing', and so far is in the interest of an important truth. Fortunately also the wrong terminology causes no error in ordinary mathematical procedure, which treats the things so misnamed in a legitimate manner.

The account we have given of negative statements and especially of those which assert impossibility seems to give an adequate solution of the difficulty The negative statement [1] always presents two realities as differing from one another, and the statements which assert impossibility for their subject of attribution are all reducible to this form, namely, a distinction between two realities Now the difference of two realities, or their incompatibility, may be itself different from the difference or incompatibility of another pair of realities Again such incompatibility or difference is exactly what an impossibility means It is because Aness and Bness are incompatible that it is impossible for an A to be a B, or, what is the same thing, it is because of this incompatibility that an AB is an impossibility. Impossibility is only the other side of necessity. for if what is A must be C and what is C cannot be B, then an AB is an impossibility and, moreover, a definite kind of impossibility because of the definite positive character of Aness and Bness. The difference of Dness and Eness may be of a different kind and so be the ground of another kind of impossibility. The difference then between two such differences corresponds to the difference between two impossibilities The mystery therefore vanishes, for we thus understand that the impossibilities are not 'nothings', but have so much definiteness that they are distinguishable from one another. Through this they get a determinate character, which however does not make them real objects or even imaginary objects Their determinateness, nevertheless, is grounded in reality, for they mean actual and real differences between real elements If Aness is really different from Bness so that an A cannot be a B, it is also true that it is *really* impossible for an A to be a B, in other words an

[1] § 115.

AB is a real impossibility. But that does not make impossibilities such as the impossible points in Geometry into real objects, i e. into what is not impossible.

The 'imaginary' points in Geometry, in which two curves which do not really cut are said to cut one another, are the expression of the particular way in which the given curves fail to cut. Their definiteness, measured by the definiteness of the mathematical expression of their co-ordinates, does not mean that they are in any true sense imaginary, but merely that the impossibility of the one curve cutting the other is a definite kind of impossibility, which can be definitely measured, and mathematics only determine the definite measure. We can now see that there is no paradox at all in the fact that from these so-called imaginaries, which are impossibles, we can derive true statements about realities. For to every reality there corresponds a set of necessities which determine it and make it what it is To these again correspond a set of impossibilities, which lead back to the necessities from which they are derived, and therefore equally well serve to define the given reality. As the set of necessities which define one reality differ from those which define another reality, so also does the set of impossibilities corresponding to and defining the one reality differ from the set corresponding to the other reality This is the simple rationale of the so-called 'imaginary quantities' and of the mathematical treatment of them. It is quite futile and a serious misunderstanding to try to justify the use of imaginaries by certain methods of 'interpretation', which merely mean that by giving the symbols another significance a given formula ceases to represent an impossibility altogether.[1]

§ 117 The apprehension of the definite character of anything involves, we have said, distinction from other things, and so involves what may be matter of negative statement To recognize red as red, I must recognize it as a colour distinct from other colours, distinct from those I have seen, and this carries with it, on reflection, that it is distinct from others I have not

[1] The above analysis was supplemented by the illustrations given in lecture. It may be added that on the principles here maintained it is possible to supply an admitted desideratum in pure geometry and make use of the so-called imaginary points and lines without depending upon the results of co-ordinate or algebraic geometry.

seen. Nevertheless distinctions thus necessitated by the definiteness of what is apprehended do not normally give rise to negative *statements*. Thus though the apprehension of green involves the apprehension of its distinction from red, and, say, sweet, it is not natural and normal to put this in words in the form of the statement 'red is not green', or 'red is not sweet'. It may be done for some rhetorical purpose but not for the purposes of knowledge. Such forms strike us as no less nugatory than the so-called analytical judgement, and that is why we don't use them.

This feeling is well-grounded, and these verbal negative statements have a real affinity to the analytical judgement in one respect. We cannot 'form the idea of' (i.e. apprehend) the definiteness of anything (e.g. of red) apart from distinctions from certain other things (e.g. colours). Now these distinctions, which are thus necessary to 'forming any idea' (the apprehension) of the thing in question, we do not express in the verbal form of statement, because they are presupposed in the idea (apprehension) of the logical subject, whereas the object of a verbal statement is to convey something new about the logical subject of the statement, and not something which is necessarily known already. Thus, though we distinguish 'straight' and 'curved', and 'straight' and 'hot', we do not naturally say 'straight is not curved' or 'straight is not hot'.

When then is the verbal form of negative statement natural and normal? When do we naturally say $(s)_1$A is not B? Clearly when our conception of Aness does not necessarily involve for us the distinction from Bness, or the absence of Bness. When the expression '$(s)_1$A is not B' is natural we may distinguish two cases. The statement may correspond either to the apprehension of something in $(s)_1$A which excludes Bness, or to the mere observation of the fact that Bness is absent from $(s)_1$A. The first case is of the form $(s)_1$A is C, where Cness excludes Bness, 'this substance does not show blue colour in the flame of the blowpipe'. We arrive at this by observing that the colour shown in the flame is, say, red. Why then have the negative statement at all, and not the affirmative which tells us more and is fully adequate to the thought behind the expression? The negative is not adequate,

for if I say the colour is not blue I do not say what colour it is and I omit besides something which I know, which also is the reason for what I say.

The ground of this is one which we shall meet with again in the case of the particular affirmative proposition. It depends on our subjective interest, the object with which we conducted the observation or experiment or inference. We state only what matters to that object, what is relevant from our point of view. I may want for some purpose to use some particular kind of substance. I find a substance with some of the apparent properties of the given substance, but one of the indispensable tests, say, is that it shows a blue colour in the flame of the blowpipe I find that it shows a red colour, but all that is important to me is that it is not a blue colour I am not interested in what the object is, now that I know it is not of the kind I want. And similarly it may be sufficient in my argument to state only that $(s)_1$A is not B, though of course if I am challenged as to my grounds I must give the affirmative statement.

The second case is that in which $(s)_1$A is merely observed to be without Bness, an attribute compatible with Aness Since this case belongs to empirical observation we cannot always be sure of the absence of the given quality; we sometimes are sure only of the absence of any observation of it Yet we may not fully realize this and so may come to assert without qualification that $(s)_1$A is not B. When we are sure that Bness is absent do we observe mere negation? We have seen already, in the discussion of the 'negative conception', that this is impossible. We should apprehend an A, viz. $(s)_1$A, which was without the attribute Bness This so far is not the apprehension that Bness is absent, any more than it is of the infinite field of the other qualities which are absent We need to have our attention somehow directed to Bness and then we become aware of its absence.[1] Now this means that we apprehend the nature of the particular A before us, $(s)_1$A, and the nature of Bness, and see that Bness is different from that which $(s)_1$A is. Thus the apprehension of the negation and of absence is after all the apprehension of two positive realities as different from one another.

[1] To find out whether Atkins is in the ranks, we have to observe each rank and file and see that he is not Atkins.

XIII

ERRONEOUS ATTEMPTS TO DEFINE 'JUDGEMENT'

§ 118 [a] We were led from the doctrine that the 'copula' is the sign of a subjective activity, called predication, to a doctrine which explains it by the objective side of thought. For we maintained that the word 'is' refers to the being of the object, and decided the question about the identity or difference of the subject and predicate by reference solely to their objective meaning We now return to the subjective side and ask the question whether in apprehension there is some subjective synthesis of subjective material 'Judgement', not in its proper sense but in its erroneous use for a fictitious [1] mental act supposed to correspond to every statement, is not infrequently resolved into conceptions, sometimes called ideas, and then defined as a synthesis or combination of ideas or conceptions; the latter being regarded as elements of judgements, not themselves judgements [2] In this there is something true, but the account given is most misleading and inadequate It is often said that the verbal expression of a proposition is a symbol or representation of thought, and thought again is somehow made to represent things, but it is not an adequate account, even of the verbal form, to say that it represents thoughts; the value of the words oftenest lies in their meaning things. 'Glass is elastic' does not stand for a synthesis of symbols in some one's mind: it means that real glass has real elasticity 'The spade is in the ground', to use Mill's illustration,[3] does not mean that one of my ideas is in another Yet, while the 'judge-

[1] §§ 38, 41, and 44

[2] For early forms of this kind of view see §§ 84 and 126

[3] Mill, *A System of Logic*, Bk I, ch 5, § 1

[a] Cf 'Jenem bloss subjektivseynsollenden Sinne des Urtheils als ob Ich einem Subjekte ein Prädikat beilegte, widerspricht der vielmehr objective Ausdruck des Urtheils die Rose ist roth, Gold ist metall u s f ; nicht Ich lege ihnen etwas erst bei' Hegel, *Logik, Enc*, § 167 (*Works*, vi, p. 329)]

ment' is not a mere putting together of ideas, we cannot say it is a putting together of realities. It might then be suggested that the truth lies between these extremes and that, as a subjective act, 'judgement' is a combination of ideas which means a combination in reality. Here we should have to ask what these ideas are, what is meant by combining them, and what is meant by 'means'. If we push our questions home, we shall often find that the idea or the 'ideal content' turns out to be an individual mental image or an imagined individual. Now, if I say 'the spade is in the ground', it is true that I may have mental pictures of the ground and of the spade, and these may be combined in so far as my picture of the ground includes my picture of the spade But I do not mean to state *that* when I state my 'judgement', nor is it these 'ideas' that I am thinking about. No doubt I probably think that the reality is somehow like them and yet I do not rely on the pictures even as representations of reality. But, it might be objected, these ideas mean reality What do we here mean by 'mean'? A word means usually something unlike itself Is it intended that these pictures mean reality in the sense that they are like reality? If it be said that the idea is like reality then we must reply: that is not the meaning of 'means'. If one horse is like another horse, we cannot say that the first means the second. Nor again can we say that these ideas mean reality in the sense that we take them for reality for we do not. It may now be admitted that such ideas and their combination are not what I am thinking about and that they do not mean reality, yet it may be suggested that these very ideas in their combination *are* my thought about reality. Now that would mean that to think about reality is to have such ideas or mental pictures before us; but that again is not so, for the ideas whether in combination or not are of no use unless I do something more than have them—i e unless I at least think that reality is something like them. It turns out then that it is essential to what is here intended by 'judgement' that there should be some activity of thought other than the presence to the mind of ideas in the sense of mental pictures in combination. It is important to notice that this indispensable activity is quite unprovided for in those views of the nature of thought which

are common in empirical philosophers, like Locke and Hume. For them, on their presuppositions, there could be nothing but a series of mental pictures: there could be no place for the activity of thinking or of judging. But of this they are often unconscious, and it is to the credit of Hobbes [a] that he clearly realizes that according to his doctrine thought could be nothing but the succession of mental images

§ 119. It is essential to statement and to what is styled 'judgement', that it should be true or false, the combination then of ideas, if it is equivalent to the statement or the opinion thereby expressed, must be true or false If I think wrongly that 'Williams is in his rooms', no doubt I have before me an 'idea' of the rooms and of Williams in them as mental pictures. Still my mistake does not lie in this presentation to consciousness, but in something else, that is in my belief that reality somehow corresponds to this combination Thus truth and falsehood would belong to something which is indeed in thought, but which whatever else it may be is neither these ideas nor their combination But it may well be urged that truth and falsehood do belong to ideas, in so far as these stand for something distinguished from reality, if then such ideas are not true or false in their combination, what is true or false in the matter? Again, we may be reminded that when a 'judgement' is wrong or improbable it is often said to be only an *idea* or a 'mere idea of ours' If this means that the combination of mental pictures is wrong or untrue, we must reply, as before, that truth and falsity cannot apply to that at all We must concede of course that what is wrong may be naturally and properly called 'idea', it is indeed ideal, but it is precisely that activity of thought which is other than the combination of these mental pictures It is the belief that certain real elements are combined, or, if we wish to relate this to the mental pictures, it is not their combination in the mind, but the belief that there is a combination in reality somehow similar to it This is what we mean by 'idea' when we say that our idea is wrong. It is

[a e g 'the perpetual arising of phantasms, both in sense and imagination, is that which we commonly call discourse of the mind' and 'Differentiarum autem observatio non est a sensione proprie dicta sensio aliqua distincta'. *Elem Phil*, Part IV, ch 25 (Molesworth's ed, Eng 1, p 399, Lat 1, p 325) Cf *Human Nature*, ch iv, § 1, ib Eng iv, p 14]

not a mental picture and cannot be reduced to any terms of mental pictures.[1]

If we now drop the term 'mental picture' and say instead that the ideas combined in the 'judgement' are our 'conceptions' of realities corresponding to the subject and the attributive (leaving the term 'conception' for the moment uncriticized), it may be that judgement or apprehension or opinion involves these as distinguishable elements in general. But we cannot represent the judgement (in the proper sense) by merely saying that it is putting such ideas together We are bound to say what sort of putting together we mean, for the expression 'putting together' is in itself too vague to tell us anything, being only a metaphor derived from putting objects together in space. Now such putting together of ideas as we here really mean is simply judging that the object to which the one idea refers possesses the kind of being to which the other refers; so that, if we ask what kind of putting together judgement is, we have to use 'judging' to explain it, and thus come in the last resort precisely to the indivisible act itself of judging, as apprehension after inquiry, an act which cannot be further elucidated or described, cannot be resolved into parts nor represented as made up of them. The notion of judgement is unique, it cannot be reduced to any other denomination We must simply recognize it in its universal character through instances in which we exercise it. A similar account holds of opinion.

§ 120. We may now treat the question from the point of view of what has been said previously of the relation of thought to its object. For clearness let us take $(s)_1$A is B in the case when we *know* that $(s)_1$A is B. Can this be rightly called a combination of our conceptions of $(s)_1$A and B or Bness? What are these conceptions? Mental images we have excluded. Suppose it be said that they are some entities, though not images, existing in the mind. It may be answered that nothing could be found

[1] To avoid misunderstanding, observe that an example has been taken where 'mental images' have a real place, the error in the statement 'Williams is in his rooms' usually regards a statement made when we are away from Williams' rooms, so that it does not express a present experience. When the same statement expresses a present experience it has nothing to do with the mental images. They belong to the case where we are presumed not to be in the rooms.

to correspond to these words except just the mental images. But, even if *verbi causa* we allowed these nondescripts, the attempt to represent 'judgement' as a combination of them would fall under precisely the same kind of criticism as that which has been passed on the combination of mental pictures. What intelligible sense can we give to the phrase 'conception of $(s)_1$A' in this judgement of knowledge? It is in the case of knowledge simply the apprehension [1] of the reality or object $(s)_1$A itself and, if what is apprehended be called the content of the apprehension or conception, this content is just the reality itself. Now that being the kind of meaning which the conceptions of $(s)_1$A and B or Bness would have, how can we combine them and of what kind would the combination be? For combination must be of some definite kind. We cannot in the act of knowing (whether judgement or not) be combining the 'contents' of the apprehension, for these are the objects $(s)_1$A and Bness, and the statement of our knowledge does not mean that we have effected any combination of objects But now if we abstract the content of the apprehensions, i.e. 'what is apprehended', there is nothing left to combine, for apprehensions without anything apprehended are entirely empty.

§ 121. We may arrive at the same result in another way. Consider the conception in its fullness as really what it is, without abstracting the apprehension from what is apprehended, as the apprehension, that is, of the natures of $(s)_1$A and B. How can we combine such apprehensions in their full nature? The combination would have to be of some definite kind and it would be our subjective act Now we might combine them in the sense of thinking one after the other in time, or it may be thinking them somehow simultaneously; we may, that is, have the apprehension of $(s)_1$A along with that of B. But now clearly neither way of combination is having the judgement that $(s)_1$A is B. Clearly also, as the nature of the object is inseparable from the apprehension (as its so-called content), any other possibility of combination, except that merely temporal one, must depend upon the nature of the objects or content, and on the

[1] This is the conception which occurs in knowledge there is another kind which we have called 'problematic', but the consideration of the first is enough for the present purpose.

combination of which they are capable. But that is an objective fact independent of any subjective act of ours, and so it is not a combination which we make. It can only be recognized or apprehended by us, and the judgement of knowledge, or other such act of knowing, is such apprehension. Apprehension itself is obviously ultimate Everything we can say about it, or indeed about anything else, presupposes it, it is futile therefore and a mere fallacy to profess to explain the act of apprehension.

The question may be asked 'is there any sense in which the conceptions of A and of B may be said to be elements in the thought corresponding to $(s)_1$A is B?' Only in this sense, that to form the thought, the judgement or opinion, I must apprehend $(s)_1$A and Bness. But my thought does not consist of these apprehensions, it is not a mere combination of them. It is a new apprehension, in fact the apprehension of a relation between the objects of the aforesaid apprehensions In any legitimate sense then of the word combination we cannot combine our conceptions or apprehensions at all, much less represent 'judgement' or other act of ours as such an activity on our part.

The statement none the less does refer to some combination or other, to some unity or other of different elements, or the mistaken view would never have arisen And what it does so refer to is obviously a combination of the nature of $(s)_1$A with that of Bness, or more correctly a unity of some sort between them. Now, while we apprehend $(s)_1$A and Bness, that is, have our conceptions of them, we also apprehend their relation and unity. This is the correct account; not that we unify our apprehensions of A and B, but that we apprehend the unity of A and B, a unity of a certain kind. This may be put shortly, thus —In the judgement of knowledge and act of knowledge in general we do not combine our apprehensions, but apprehend a combination.

§ 122. We may now turn to the consideration of a modern theory of so-called 'judgement', which has enjoyed considerable vogue, and illustrates the futility of the attempts to explain or define 'judgement' in terms of anything but itself, and particularly in terms of 'ideas'. Though apparently highly modern in form it is only the result of a mistaken tendency in philosophy which is quite ancient.

This modern theory of the ideal element in judgement defines judgement [1] as follows: 'Judgement is the act which refers an ideal content (recognized as such) to a reality beyond the act.' [2] The ideal content is then identified with what is called the 'logical idea'. For the purpose of this definition idea has in this theory two significations. (i) A mental image, e.g. of a particular horse—sometimes called 'the psychological idea'. (ii) The 'meaning' of this mental image which = 'the logical idea'.

The meaning of (i) (which meaning = ii) is said to be a part of itself, e.g. the mental image of a particular horse means horseness, which is supposed to be a part of the content of (i).

All this, and the theory built upon it, depends upon an erroneous analysis of such terms as 'sign', 'symbol', and 'meaning'. 'Sign' we find defined thus. 'Any fact that has a meaning, and meaning consists of a part of the content [i.e of the sign itself, or the fact itself], cut off, fixed by the mind, and considered apart from the existence of the sign.' In the first place, this explanation has nothing to do with 'meaning' or 'sign' or 'symbol'. So far as it describes anything at all, it describes an act of abstraction which may be either (*a*) the abstraction in which we think of a universal apart from the particular in which it is manifested—horseness apart from a particular horse, (*b*) that in which we think of an individual element in an individual whole apart from the other elements—e g. the horse's tail, the surface of a given solid apart from volume, weight, &c.

Secondly, the last clause of the definition of sign 'considered apart from the existence of the sign' is self-contradictory: when we have really to do with a sign which has a meaning, the meaning can only be thought of as a meaning in reference to that which has it as a meaning—viz. the sign In short 'meaning' is meaning *of*

Thirdly, the sign as above defined turns out in the sequel to be a symbol or *natural sign* [3] as opposed to an arbitrary sign.

[1] Judgement is used throughout in the loose sense which has been criticized in previous lectures.

[2] F. H. Bradley, *Principles of Logic*, I, ch I, § 10 (1st ed , p. 10)

[3] This implies that symbol and natural sign are convertible terms, and yet we find afterwards that a natural sign is made wider than a symbol.

This naturalness, apparently, can only mean that the significance is a part of the sign's own nature, e.g. cunning—of the fox's nature (an example given by the writer). The mathematical sign × has not this characteristic, but to oppose on that account 'natural' to 'arbitrary' is to be misled by an ambiguity. The symbol is not natural in the sense in which natural is opposed to arbitrary: but a symbol as a symbol is arbitrary All signs and symbols have a meaning only by our arbitrary decision: none of them mean anything of themselves · it is *we who mean something by them.* A picture or image of a fox does not in itself 'mean' cunning, we may arbitrarily give it such a meaning, as in a political cartoon, and we are understood because people are already aware of such conventions In another context the fox picture might be understood to have been chosen for some very different purpose—e.g. to symbolize a colour.

Fourthly, we may ask—what part of a content is the meaning? e.g. why should the meaning of a horse-image be horseness—a leg is a part of the content why is not horse-image the symbol of a leg? We notice that, in the illustration of the fox, the fox-image happens not to be taken for the symbol of foxness but of cunning. To the question why this is so no direct answer is given, though it is perhaps implied or may be got from the later distinction of a sign which stands directly from one which stands indirectly for its meaning, e g it might be said that the fox-image stands directly for foxness, and indirectly for cunning. What such a distinction could mean the author does not even attempt to elucidate, and the truth is that the distinction between standing 'directly' and 'indirectly' for a meaning will not bear any examination. What could be meant by 'standing indirectly for'? Again, what is the maximum *part* of the content, which can be *the* meaning or *a* meaning of the given mental image? Why, indeed, if the mental image can mean a part of its content, should it not mean the whole?

Now let us consider the application of the given theory to the instance of horseness.

(1) Horseness is obviously not the meaning of the mental image, and if horseness is a part of the content of the mental image of a horse, it is so only as an abstraction from the particular

in which it is manifested. But now that is impossible, for horseness is manifested in real horses, and not in the mental image.

(ii) The image could not 'naturally' mean this abstraction from itself. If it did, in any given case, it would be because we had arbitrarily chosen that it should. But this never takes place: we do not mean universal horseness by the image of a horse.

But now let us nevertheless assume these untenable distinctions and apply them to what is said of the judgement.

First, the idea we called No (ii), or 'meaning' as = what is meant, is of course the reality. This is clear from the statement that 'we never assert the fact in our heads, but *something else which the fact stands for*'. That 'something else' is the meaning, = what is meant. Now it is said in the context that there is no judgement without ideas, because judgement is true or false, and 'truth and falsehood *depend on the relation of our ideas to reality*'. What can 'idea' mean in such a statement? Not idea No 1, nor does the author suppose it to mean this. The relation of these to Reality cannot determine truth or falsehood, that can only be done by my judgement about their relation to Reality. Can it then be idea No ii? Now that idea is the meaning, = reality meant, but in this context the idea has to be distinguished from the reality, otherwise we should have that 'the relation of Reality to Reality is true or false'. Neither then of the two senses of idea is possible, and the theory refutes itself This is an excellent illustration of the truth that if we push home the question of what the ideas really are by which judgement is explained we find in the end nothing but the mental image, everything else turns out to be mere words and to resolve itself into the mental image

If we ask, however, what reasonable sense the word 'idea' has in such a statement as that which we are criticizing, the answer clearly is that it stands for judgement or opinion; neither mental pictures, we may repeat, nor what they are supposed to mean, can determine truth or falsehood—only judgement or opinion can determine that. Thus to say that judgement is impossible without such ideas is to say that judgement is impossible without judgement (according to the writer's use of the word judgement).

Again, it is said that we do not assert the fact in our heads, but what it 'stands for', and in the same context we find that the idea has to be the idea *of* some existence Here we find the same interpretation necessary for 'idea'. My idea *of* something is not the mental image, nor its meaning (if it had any): my idea of A is the judgement or opinion that the real A has the real quality B, and the relation of that to the mental image is obvious and has already been discussed.

Again, notice a certain confusion introduced into the second meaning of idea—idea No II It is the meaning symbolized by No. I idea and must therefore be the reality. How, then, can it be called idea? For throughout the opposition of idea to Reality is maintained, and we are told that these ideas (i.e. of No. II kind) are the ideas which judgement really uses, and they therefore must be the ideas which determine truth and falsehood by their relation to Reality, and as such are distinguished from Reality.

This may have come about through a confusion of two senses of 'meaning'

(*a*) The thing meant In the expression 'these two senses of idea as the symbol and the symbolized', what has been called the meaning is now called the symbolized, and therefore = what is meant.

(*b*) the meaningness of the sign—i.e. the fact that the sign has a meaning—the property of the sign of having a meaning This is at least so far on the way to being an idea that it is not the reality meant, but a property of the symbol which is idea

In the account of judgement we are told that 'we do not *use* the mental fact [or image], but only the meaning'. That perhaps agrees with the statement that 'we never assert the fact in our heads, but something else which the fact stands for'. The question arises, what is the *use* of the mental image at all, for it seems from the above that we do not use it; and clearly according to the second of the above statements ('we never assert, &c.') we get at 'what it stands for', and make our judgements about that. Again, therefore, we must ask what is the use of the mental image? Upon the statement that we do not use the mental fact but only the meaning of it, there arises

another difficulty. The meaning of the mental image is, according to the general context, properly the reality which it is said to stand for. Now in judging we do not use reality or realities, though we judge about them, in any intelligible sense of the word 'use'; and so we cannot use the former sense of the meaning of mental image, because it is reality. The statement then, whether true or not, seems only intelligible if that other sense of meaning is intended—'the meaningness of the mental image', which, as has been said, is probably confused sometimes with the thing meant. As we do not 'use' the mental image, according to our author, and we do not use the meaning of it, as what is meant, it seems only to remain that we should use the meaningness of the mental image—i e we use the fact that it has a meaning, and this is, perhaps, nearest to the writer's intention, though he has not realized it with any clearness. But the meaningness of the idea (= mental image = No i idea) is precisely as such *of* the idea, and cannot be abstracted from it Thus, if we use the meaningness of the image-idea (taking this to be No 1 idea, or the 'psychological idea'), we certainly use the image-idea itself i e. we must use 'the mental fact' which we are said not to use

Further, it is said that the meaning which we use is the 'logical idea', and this again 'is what we predicate, and we predicate it of reality'. Now, in the difficulty last considered, in order to make sense, we had to equate the logical idea to the meaningness of the mental-image idea If we keep this signification, the statement about the logical idea and the predication of it becomes 'in judgement we predicate the meaningness of the image-idea, and we predicate it of reality' But obviously the meaningness of the mental-image idea (if it has any) can only be predicated of the mental image and not of reality. Again, as to this predication of the 'logical idea',[1] if it is the meaning as = the thing meant, as it obviously should be, then that is reality, and as we have seen cannot have the name idea at all, if idea is distinguished from reality But now the context implies it must be so distinguished, because a reference is made

[1] It is a sign of the confusion of the doctrine that this 'idea' should be called 'logical'. What could be the meaning of 'logical' in such a reference? (Fiction of a logician?) And why is the other idea called 'psychological'?

back to the previous statement—'without ideas no judgement', where the ideas in question are distinguished expressly from reality.

Finally, we come to the definition of judgement which ends the discussion. 'Judgement is the act which refers an ideal content to a reality beyond the act'; 'reference' is a vague term, and we must ask what kind of reference is intended. It simply means that, in A is B, Bness is referred to A, and, if we ask how it is referred (for the judgement is more than that), referring can't mean actually giving B to A Thus the only reply can be that we judge that the reality A has the reality Bness. Thus 'referring' means judging and once more the act of judgement is defined by itself. What is referred—viz the ideal content, falls under our previous criticism If a content *is* ideal, as somehow distinguished from reality, it is merely absurd to say that we predicate this idea *of ours* of reality—i.e. attribute it to reality The truth is that this ideal content is not idea No. 1 · i e not 'the psychological idea', or mental image If, then, it is to be idea No ii—the 'logical' idea—, that we have seen is only ideal at all if it stands for the 'meaningness' of the mental image, and then it certainly cannot be predicated of reality. On the other hand, if it has the former significance of meaning (= what the mental image means) it is indeed true that what is supposed to be meant by the mental image, but really is not, is predicated of reality But that is only because it is not ideal—i e not an 'ideal content' at all.

§ 123. This elaborate theory has a fairly simple origin. It is unconsciously grounded on the same principle as the old-fashioned copying idea theory—viz that it is our ideas which are true or false, and judgement is true or false because it somehow involves them The ideas themselves are true or false, according as they agree with reality or not, and 'agree' means to be like reality Our author's form of this principle we have quoted already; there is no judgement without ideas, because judgement is true or false, and 'truth and falsehood depend upon the relation of our ideas to reality'. Here the vague word 'relation' is substituted for 'agreement' or 'likeness'. In developing this the writer simply modifies or alters certain

features of the old copying theory, and always for the worse. He is in precisely the same difficulty as the ordinary copying theory, and what he does is to substitute for the comparatively clear statements in it confused and self-contradictory statements which depend on verbal confusions. The primitive theory is what is fairly represented in Aristotle[a] It is a putting together of ideas which are like realities, and the judgement is true when their putting together is also like the combination of the corresponding realities The correspondence then is likeness. The first change that the present theory makes is to alter the relation of idea to reality from 'copying' or 'likeness' to 'meaning'. The mental image (=fact in my head=psychic fact=psychological idea) is said to 'stand for' the existence or, more definitely, to 'mean' existence This is quite an impossible use of 'mean' and the writer falls into irretrievable confusion in his attempt to explain *what* he means. Thus for the comparatively clear idea of likeness or copying is substituted something unintelligible. Again, in the primitive copying theory the judgement is simply the possession of a synthesis of ideas which 'corresponds' to reality in the way of being *like* a synthesis in reality The difficulty is that such possession is of no use unless we know that the likeness exists, which must be by a new judgement. But in the new theory before us the judgement does not appear as the mere possession or consciousness of the ideas which are said to mean the reality, or indeed as the possession of ideas at all A change is made, no doubt to avoid the above difficulty of the copying theory, and the change is of a twofold character. First, the judgement is not placed in the possession of ideas but in the use of them. Secondly, the meaning of the mental image or idea is itself called an idea, and the idea which is 'used' is the latter and not the former. The reason we shall presently see.

As to the 'use', we have seen —

1. That it is a contradiction to say that the meaning of the image can be used without using the image.
2. The use itself turns out to be referring the meaning of the mental image—called also the ideal content and the logical idea—to reality. and this referring, we have

[a *De Int* 16a 12, 19a 33, *Met* Θ, 1051b 3 Cf infra, p 297]

seen again, is nothing but judging the ideal content true of reality, and so judging is defined by itself.

This set of changes therefore substitutes confusion for comparative clearness of statement, and adds the fallacy of the *circulus in definiendo*.

Finally, how is this new theory situated as regards the difficulty which seems so fatal to the copying theory? It is here we shall discover the real reason for introducing the confusion about the meaning of an idea, and for calling this meaning another idea. The difficulty for the copying theory is that the possession of a complex of ideas like the complex in reality does not help us unless we know the likeness, and for that we must know the reality and thus we should not need the idea. Or else, if we can only have the idea, we could never know the reality and never know the 'correspondence' of the ideas to reality The difficulty applies in all essentials to the new theory. If an idea 'means' reality or existence. if the 'fact in my head' stands for existence, that is of no use unless we know it, and that we cannot do without knowing the existence, which makes the meaning-idea superfluous Or else, if we have only access to ideas, we could never know that the mental-image idea had a 'meaning', i e we could not have the second kind of idea—the meaning-idea—at all. The difficulty is unconsciously concealed and evaded by confusedly blending two different senses of the word 'meaning' in one This confusion we have already analysed The idea which is the meaning of the idea called 'mental image' ('psychic fact', &c) is treated as —

(*a*) That which is meant = existence, and as —

(*b*) The meaningness or representative character of the mental image-idea

As (*b*) this idea may be 'ideal content'. As (*a*) it is of course the existence meant. And thus the gap between idea and reality is bridged by this inconsistent double meaning of the 'logical idea' or the 'meaning'. In conformity with the vague statements that there is no judgement without ideas and that judgement uses ideas, the predicate of the judgement is made an idea or ideal content, because 'meaning' is taken in the second sense. Judgement then becomes the referring

(= judging) of an ideal content (which is the predicate) to something. Now this is saved from being a mere subjective act within the mere subjective material of ideas, with no guarantee that it has anything to do with reality, by taking the idea predicated (=the meaning) in the former sense of meaning—viz. what is meant, i.e. reality. And so now in the formula 'judging is the referring of an ideal content to something', we can substitute the word 'reality' for 'something' since the ideal content now = reality And so we finally arrive at this portent of definition—'Judgement is the act which refers an ideal content (recognized as such) to a reality beyond the act'. There is no such complication of confusions in the old copying theory.

§ 124. The confusions which lurk in this modern theory will be plainer if we now examine more closely Mr. Bradley's use of the words 'sign', 'symbol' and 'meaning'.

He discusses the meaning of symbol, which (as the remark 'for logical purposes ideas are nothing but symbols' shows) is of the greatest importance to him He supposes himself to be giving a mere commonplace, which everybody might know, but instead of that he has given a curiously confused and false representation of the meaning of symbol and symbolism, sign and significance.

He omits the most essential feature of it, viz. that it is an arbitrary convention.

He speaks, without any safeguarding expression, as if a fact could in itself mean something else. No fact can do that. It is entirely due to our convention that a fact has a meaning other than itself. Signs do not mean anything, it is we who mean, and we mean something by the sign It is obviously our convention (e g) that x in algebra stands for an unknown whose value is to be sought.

What, however, he means by a symbol (he would call x, y, and z signs, or rather the kind of signs which are not symbols, as will presently appear) would rather be illustrated by such a fact as that an evergreen tree may suggest constancy to me (Oh Tannenbaum, oh Tannenbaum, wie treu sind deine Blatte!) and may become a symbol to me through this. The reason is that

the continuation of the greenness in contrast to other trees, in spite of changing seasons—a thing which is pleasant to us, has, in its permanence and resistance to external change, a common element with a steadfast character, which also is a pleasant thing to us. This it certainly has of itself, and not by my convention merely. Further, I may say that one reminds me of the other, and this again, though subjective, is not due to my convention. But that does not make the one a symbol of the other, does not indeed decide (e.g.) whether the character is to be a symbol of the tree or the tree of the character. Most certainly one of them does not 'mean' the other If, however, I send a card with a fir-tree painted on it to my friend as a token of my constancy, that is a symbol to him and means constancy, if we have agreed upon it. Suppose there is no such convention between us, still *I must have arbitrarily given the tree its meaning* In itself it can mean nothing The picture, however, might be said to mean the tree. If I intend my friend to interpret it, he must at least have something to suggest to him that it is a symbol, so that he may think I have decided it shall be a symbol And then his course would undoubtedly be to consider what qualities the tree has, and which of them have anything in common with what he, from his knowledge of men, may conjecture I wish to symbolize. There is therefore here no exception to the arbitrary and conventional character of the symbol

In the case (e g) of an algebraical symbol the meaning is no part of the content, and doubtless Mr. Bradley means that what he calls a symbol is the particular kind of sign in which the meaning happens to be part of the content. Even when the meaning is related to a part of the content, as in the case of *the fir-tree, or the fox taken as an emblem of cunning, it cannot* possibly be defined as he has defined it, for the process so described would only be the act of abstraction; *in the case of* the fir-tree, e g, it would simply be to think of evergreenness or unchangeableness generally apart from the particular tree. The abstraction would in no proper sense of the word become a 'meaning' of the tree.

The confusion is further illustrated, as follows: 'In contrast with a symbol a sign may be arbitrary.' This implies that a symbol is not arbitrary, which is of course impossible.

Apparently he makes sign wider than symbol, and the division is like this

sign

arbitrary sign | sign not arbitrary (=symbol)

Then presently he seems to imply this division:

sign

(*a*) with natural meaning | (*b*) not with natural meaning.

'Symbol' as being a sign must come in one of these species, but the author says 'a natural sign need not be a symbol'. But symbol cannot be in class *b* because *b* must equal arbitrary sign Therefore 'symbol' must be in *a* This gives the following

sign

(*a*) natural sign | (*b*) conventional sign =sign not with a natural meaning.

not-symbol | symbol

Further symbol, though a natural sign, is called a 'secondary' sign, because it does not stand *directly* for its meaning. This seems to imply that the class of natural signs is divided into 'symbols' which stand indirectly for their meaning, also called 'secondary' signs, and those which, standing directly for their meaning, would presumably be called 'primary' signs. The former, though he does not say so, are probably the mental images whose meaning as the 'logical idea' is used in judgement, at least they probably belong to this class, whether there are any other kinds of members in it or not

We may suppose that while fox 'indirectly' means cunning, the mental image of a fox 'means' foxness as that of a horse 'means' horseness But no explanation whatever is given of this, and the theory prevents a kind of explanation which would have been possible, if horseness had not been called a part of the content of the horse-image Horseness really in the true sense is not a part of the particular horse, but everything in the particular horse is included in horseness. Thus it might be said that while foxness includes the whole being of a particular fox, cunning includes only a part of its being. This would have given some chance of distinguishing primary and secondary

signs. But this way is not open since both cunning and foxness are considered as part of the content of fox. And of course it is absurd to suppose that the image of the particular fox either 'means' or 'symbolizes' or is 'a sign of' either cunning or foxness.

The final classification appears to be:

sign		
(*a*) natural sign		(*b*) conventional or arbitrary sign
(a_1) *primary*	(a_2) *secondary*	= sign which has not a *natural* meaning.
standing directly for its meaning, e.g. fox symbolizing foxness	viz. symbol standing indirectly for its meaning, e.g. fox symbolizing cunning	(no indication whether to be subdivided into primary and secondary)

But what possible sense could be assigned to standing 'indirectly' for its meaning? 'Direct' and 'indirect' are here as impossible of application as straight and crooked, and the use of such terms betrays an extraordinary confusion

The only chance of getting any meaning into such an expression seems to be to make the sign, which is nothing but a sign, stand 'directly' for its meaning For instance ÷ stands for division and is nothing but a sign of division, while fox is something in itself, besides being taken as a symbol of cunning, and so by an abuse of language might be said not to stand directly for cunning. But then it would be the arbitrary sign alone which could be called *direct* and all the natural ones would have to be called indirect.

This account of sign and symbol and meaning is in fact utter confusion

§ 125. It has been pointed out above that strictly *things* cannot mean anything, that it is *we* who 'mean', and we mean something by some sign or symbol which we use for the purpose. There are two such uses.

I. We use a symbol, e g a word, for communication of our

thought to others. But of course no such use can be made of *our* mental images, which can only be in our own consciousness and not in that of others.

II. (i) We use symbols for the operations of our own thinking as in algebra. But clearly there is no use of mental images analogous to this.

(ii) We use language in our own meditation and thinking and certainly think by help of it The symbol is here merely conventional and so far there is no analogy between it and the mental images Nor do they (the mental images) enter into any system of constructed relations like the symbols of algebra, or words in their grammatical construction.

There is however a certain analogy In thinking by means of words, we use words and we are not thinking of them but of things, of things or realities meant by these words. In thinking about realities, individuals not present to us, we use mental images and we are not thinking about the images but about those realities But there is this great difference, that we do not use the images as signs or symbols of the realities; on the contrary they are our imagination of what the reality really looks like We might rightly say 'that is how we suppose the reality looks' and this is language which we would never apply to a symbol.

Besides there is an important use made of mental images when we think of universals. Again it may be said we use the mental images Mr Bradley indeed is strictly hardly entitled even to the help, such as it is, of this fact, for he says it is the mental image as such which we do not use. We are not thinking of the images but of the universals. But here again they are not used as symbols of the universals. On the contrary, we can only think of the universal as realized in a particular and the mental image is of use only as the image of such a particular. We imagine ourselves to be actually contemplating a particular in which the universal is realized

To put it in the simplest language When we are thinking of particulars absent from perception, we are imagining the object itself thought about (the object we are thinking about), not imagining a symbol of it: in thinking of a universal we

imagine a particular realization of the universal, we do not imagine a symbol of it.

There is a grain of truth in what Mr Bradley says in so far as the analogies above pointed out obtain, but they do not conduct to symbolism and he has almost entirely mistaken the real condition of the facts and the function of the mental image. He speaks as if the mental image were for purposes of thought related only to a universal which is its meaning. The mental image of a horse has to do with judgement only as having the universal horseness for its 'meaning'. We 'use' only the meanings and the meaning is for him (as shown in his illustration of the horse image) a part of the content, namely is a universal. We think, he says, or rather assert the fact the image stands for, not the image In that case we should make assertions only about universals and our mental images would relate only to these. But obviously our mental images constantly relate to individuals, and are not there merely to help us think universals, but constantly to help us think particulars He says, indeed, we always predicate the 'logical idea', which strictly implies that the predicate is always universal. This is not true, the predicate (the true logical predicate) may be particular. There is in this connexion an important difficulty, which is not provided for in his imperfect analysis. It does not however affect the present criticism. We think of the image as like the object and we say that the object looks like what we are imagining. But an image is not like an object as an object is like an object. One horse is like another in the real universal 'horseness' both are manifestations or realizations of 'horseness' and that is why they are alike But an imaginary horse is not a realization or manifestation of real horseness, it is simply (and the language is accurate and can hardly be improved) the imagination of such a realization Thus the imaginary horse is *not* like the real horse in the real universal horseness: its likeness to the real horse does not consist in its being, like that, a realization of horseness.

Now when the author treats 'horseness', which is what we assert and so is the real (what the mental image of the horse stands for), as a part of the content of the mental image of

a horse, he has implicitly made horseness equivalent to real horseness, present in or realized in the mental horse-image. Thus he can in no way distinguish the imagination from the experience of a horse. The truth perhaps is that he has not reflected enough on the matter to be fully conscious of what he is doing. It is perhaps significant that, in his account of the Association of ideas, he commits himself to an explanation which confounds experience with imagination.

XIV[a]

APPREHENSION, CONCEPTION, AND STATEMENT

§ 126. THE subjects to be considered, according to the ordinary phraseology, in this chapter would be described as the relation of Conception and Judgement; more particularly (i) the difference between Conception and Judgement, and the questions whether (ii) Conception precedes Judgement and (iii) truth and falsehood belong to judgements only and not to conceptions.

But the very form in which these problems are raised implies the acceptance of certain distinctions without critical examination, which must first be disputed. The questions themselves cannot be clearly proposed until the presuppositions of their ordinary formulation have been weighed.

In the judgement of knowledge and the act of knowledge, we do not combine our apprehensions but apprehend a combination. That is, while we apprehend $(s)_1$A and Bness (that is, have our conceptions of them), we also apprehend their relation and unity. Now obviously the conceptions themselves are not the given judgement nor are the apprehensions of them the apprehension which constitutes the judgement. The question then naturally arises as to the difference, if any, between conception and judgement. In our account we have used the term apprehension sometimes for one and sometimes for the other. Are then the apprehensions of $(s)_1$A and of B or Bness themselves judgements? The question is of importance and applies to judgement in its strict sense as well as in the erroneous sense which we have criticized Let us first consider how it has been treated in modern logic and in some early writers, ancient and modern. In the modern substitution of terms of thought for terms of language, judgement tends to be represented as a synthesis of conceptions. The verbal form is considered to be the expression of a subjective act of thought called judgement, and the single

[a §§ 126–141 (except 138–9) were revised in 1914–15 The terminology, however, especially the vexed word 'judgement', was not altered consistently.]

words of the sentence, or sometimes complex groups of them, are taken to express the several conceptions of which the judgement is said to be a synthesis, with no great clearness perhaps as to whether these words, or groups of words, mean or denote the conceptions or, rather, correspond to them in some way without meaning them

This representation of judgement, as having conceptions for its elements and as being the putting together of these elements, favours the tendency to look upon conceptions as something preceding judgement, as a material out of which the judgement is formed. Such a tendency, to mention a single instance, is found in the logic of Lotze [a] If this were so, conception would be the unit of thought and prior to judgement The alternative would seem to be that the unit of thought is the judgement (on the given hypothesis as to the meaning of 'judgement'), conceptions having no existence except as elements in a judgement.

This then is one of the problems which arises on this modern view of judgement, expressed in the terminology proper to that view A second problem which has arisen is whether truth and falsehood belong to conceptions, or only to judgement, conception being neither true nor false

In the philosophy of Locke, what he calls ideas correspond fairly to conceptions as above understood They appear also as elements of the statement, in so far as he defines knowledge as the perception of the agreement [b] or disagreement of two ideas Locke's answer to the two problems which we have named is clear In the first place it is evident that with him thought begins with ideas, that these are the true units of thought, and that propositions arise out of a comparison of them Secondly, truth and falsehood [c] belong only to propositions and not to single ideas taken by themselves But here he is inconsistent with himself, that is with what he says about real and fantastical [d] ideas and about true and false [e] ideas, though he endeavours to clear himself of the charge at the beginning of Bk II, ch. xxxii, 'Of true and false ideas'. The fact is that he is necessarily driven into contradiction by his theory of the origin of ideas, that is by his theory of perception. It is vain

[a e g *Logic*, I 1, § 8. b Locke, *Essay*, IV 1, §§ 1–2
c ib., IV. 5, § 2 d ib., II 30. e ib., II. 32.]

in his philosophy to define knowledge as the perception of agreement or disagreement between our ideas, unless the ideas somehow represent reality. He becomes aware of this and admits that the condition may not always be satisfied. Hence he has to distinguish between ideas which adequately represent their originals and those which do not. The former are called real or true or adequate, and the latter fantastical or chimerical, or inadequate or false

One of the earliest forms of such theories and a kind of text for them is found in Aristotle himself. According to the *De Interpretatione*[1] the written word is symbol of the spoken word and the spoken word symbol of states of the soul. Next a distinction is made between thought which is neither true nor false and thought which is The latter is statement, to which no special name is given in this passage. It involves synthesis or division, the first meaning affirmation, in which certain elements are put together, and the second negation, in which certain elements are divided or distinguished from one another. The elements in question are called thoughts which are without synthesis and division, and are neither true nor false. There is a parallel distinction in the corresponding verbal expression Aristotle says, that is, that the statement has elements in it which correspond to the thoughts which are without synthesis and division these elements are the nouns and verbs which taken by themselves are neither true nor false. In a second passage, in the *De Anima*,[2] he says of the form of thought to which both truth and falsehood can attach that it is a synthesis of thoughts, from which we might incline to infer that 'thought' is the term corresponding to conception In the first passage before us, however, the thinking which corresponds to the statement is itself designated as a kind of thought, namely that which involves truth or falsehood, while the conceptions are thoughts which are without truth or falsehood and without synthesis and division The single words taken by themselves,

[1] ἔστι μὲν οὖν τὰ ἐν τῇ φωνῇ τῶν ἐν τῇ ψυχῇ παθημάτων σύμβολα καὶ τὰ γραφόμενα τῶν ἐν τῇ φωνῇ. . . . περὶ γὰρ σύνθεσιν καὶ διαίρεσίν ἐστι τὸ ψεῦδος καὶ τὸ ἀληθές. τὰ μὲν οὖν ὀνόματα αὐτὰ καὶ τὰ ῥήματα ἔοικε τῷ ἄνευ συνθέσεως καὶ διαιρέσεως νοήματι 16^{a} 3–4 and 12–14. Cf pp 286, 314

[2] ἐν οἷς δὲ καὶ τὸ ψεῦδος καὶ τὸ ἀληθές, σύνθεσίς τις ἤδη νοημάτων ὥσπερ ἓν ὄντων 430^{a} 27.

though neither true nor false, have a meaning and are called speech in distinction from assertion and denial. The sentence is called 'word', and the enunciative form of it, that is to say the statement, is called 'word declaratory'.[1] Thus there does not seem to be any name in Aristotle for an activity of thought which might be supposed to correspond to the statement (like the term judgement erroneously used in modern logic), at any rate there is *none in common* use in his writings. His usual word for a proposition is premiss,[2] which designates it from the point of view of its position in an argument and not from its meaning

It must be observed that Aristotle here makes the same mistake as the logicians who use judgement and conception in the sense we have been discussing. He takes the sentence to represent a subjective state (states of the soul[3]), namely the thought which is either true or false, just as the moderns make it represent judgement Similarly he makes the verbal elements of the sentence taken singly represent the thought without synthesis and division, or without speaking truth or untruth,[4] just as in the modern theory the words of the sentence are made to represent conceptions The nature of this mistake has been already pointed out [5] The sentence which is a statement clearly describes the nature of a thing or object, and the verbal elements of the statement do not represent elements in our thought but elements in the thing or object

From the Aristotelian description and its modern counterpart it might be supposed that the parallelism between the judgement, with conceptions as its elements, and its verbal statement, with single words or phrases as its elements, is such that the words which are elements of the statement denote the conceptions which are elements of the judgement But this is not correct. It very often happens that there is not in the verbal statement any word to denote a conception or conceptions supposed to belong to the so-called judgement For instance the statement, lead is heavy, supposed to represent a judgement which is a synthesis of the conceptions of lead and heaviness, contains

[1] λόγος ἀποφαντικός *De Int* 17ᵃ 2 and 8
[2] πρότασις, cf supra, p 83
[3] παθήματα τῆς ψυχῆς
[4] νόημα ἄνευ συνθέσεως, ἄνευ συνθέσεως καὶ διαιρέσεως, ἄνευ τοῦ ἀληθεύειν ἢ ψεύδεσθαι.
[5] § 118.

indeed a word which denotes one of the supposed conceptions (lead) but has no word which denotes the other conception (heaviness), although heavy certainly presupposes heaviness.[1] It would however be sufficiently accurate for the purposes of the erroneous theories before us to say that the verbal elements of the statement either denote or imply the conceptions contained in the judgement.

§ 127.[a] What is presupposed then in the two questions, whether conception is prior to judgement and the true unit of thought, and whether truth and falsehood belong to judgement only and not to conception, is that the statement always expresses a judgement and that the judgement itself is some sort of putting together or 'synthesis' of conceptions These presuppositions, as we have endeavoured to demonstrate, are erroneous.

In the first place it has been contended not only that the use of the word judgement is quite incorrect and that it does not always correspond to the mental attitude which issues in the statement, but also that there is no one general form of thought at all to correspond to the one general form of language called statement. Secondly, the verbal statement, so far from implying judgement, does not, in general, signify anything subjective at all. Thirdly, neither judgement nor any other of the forms of thinking or apprehending which lead to statement can be represented as a combination of conceptions

It does not however follow that there are no such problems, even if the way in which they are put involves fundamental mistakes It may happen that these problems do correspond to some real demands of our reason and that they only want restating; in their essentials they may prove not to depend upon the mistaken theories which their usual formulation implies. We shall endeavour to see whether this is so by returning to a consideration of the meaning of conception as contrasted with

[1] The relation of such an adjective as heavy to the noun heaviness is considered in § 81

[a] A digression on the worth to the philosopher of normal linguistic usage has been transferred from here to my Postscript The idea was perhaps originally suggested by Curtius, who in the preface to his *Greek Grammar* says, 'Rightly examined our sense of language is here, as often in my belief, a far more certain guide than the hair-splitting combinations of philosophy']

judgement and with the other forms of thinking irreducible to judgement, which issue in statements.

The word conception is a word in ordinary use and not a technical expression, at least not originally. The word concept, on the other hand, is technical. What is the proper meaning of conception as it occurs in ordinary use? There seem to be two main senses. In the first place we find the expression conception *of* something, as for instance my conception of a solid body or of a fluid. In psychology and in philosophical reflection there is a tendency to regard the conception of an object X as something entirely mental and distinct from X. This, although so far not altogether incorrect, is commonly associated with the quite erroneous tendency to treat this mental something like a mental image. If in ordinary life we asked a man what his conception of a fluid was, he would tell us what he thought was the nature of a fluid, that is to say he would tell us what he thought a fluid was. Similarly my conception of X in general means what I conceive X to be, though we shall see that this phrase requires some elucidation. Conceiving here may mean thinking and, in that case, my conception of X is what I think X to be, whether the thinking is apprehension or only belief or opinion. Thus my conception of a body may be that it is a congeries of atoms. If then we merely take the phrase 'what we think body to be' as a description of the conception of a body, it might be said that a congeries of atoms is what we think body to be and therefore is the conception of body. But this is clearly wrong, for the phrase a congeries of atoms does not mean anything subjective or mental but something objective. The conception of body here is not a congeries of atoms but 'that it is a congeries of atoms'. I may say indifferently that my conception of X is that it is Y, or what I think of X is that it is Y. For accuracy therefore we require to expand the phrase what we think of X, or what we think X to be, into 'what we think X to be, taken as thought by us of X'. For instance, in the example given, my conception of body is not a congeries of atoms but 'a congeries of atoms thought of as being what X is'. It will be observed here that what is said to be my conception of X cannot be represented verbally by a noun, or a noun-phrase, but always requires a verb or implies a sentence in which a verb

is used; implies, that is, from the point of view of language a statement, and, from the point of view of thought, knowledge or opinion. For instance, if I say my conception of X is that it is Y, this really contains the statement X is Y as made by me. Again, if I say 'my conception of X is my thinking (the change of phrase will be explained presently) of X as Y', my statement that X is Y is implied. Thus my conception of X either contains or implies in itself knowledge or opinion of mine (what is erroneously called judgement) corresponding to the fact that its verbal expression includes or implies statement. If now we say 'my conception of X is that it is Y', what is it that has to be understood before the word that? It would probably be answered that it is my opinion, my belief, &c. This would seem to identify conception with opinion, belief, &c, so that its verbal expression would be statement or affirmation. Again, if we ask the questions what is my opinion, &c., about X and what is my conception of X, the answer may be the same to both questions. that it (i e X) is Y. This again serves to identify, apparently, conception with a form of thinking, such as opinion or knowledge, which corresponds to statement.

If this were so, it would seem as if conception were a redundant word quite unnecessary in the language My conception of a thing would simply be my opinion, judgement, &c, about it Would it then not be a kind of perversity in language to use the phrase 'conception of', about which there is a kind of vagueness, so that it tends to be regarded as a mental image, instead of the straightforward and unambiguous terms knowledge, opinion, judgement, which cannot possibly be confounded with mental images?

§ 128. We shall find that language is after all vindicated once more in regard to its normal employment of a special word conception, as distinct from opinion, judgement, &c. The forming of an opinion or judgement is a definite act; for instance, if we form the judgement that X is Y by proving it, the act of judging is the act of proving The accurate form therefore of the question before us seems to be, 'Is having a conception the same thing as the act of forming a judgement or an opinion?', in other words, does having the conception of X as being Y mean precisely that I am forming the opinion

that X is Y, or judging that X is Y? The answer seems clearly No! and this answer would be the natural one in accordance with the normal use of language. We should be inclined to say, perhaps, that our conception of X as being Y was not the judgement or opinion that X is Y, but rather the result of it. But now what is the nature of this so-called result? One result may be a change in our mental image of X in cases where a mental image is possible and relevant Yet as we have seen the conception is not properly a mental image at all. There is however another kind of result When we have been through the process of forming the opinion that X is Y, or of judging the same thing in a proof, our thought about X is changed, we no longer think of it as merely X but also as being a Y. After we have formed the judgement (or the opinion)—then, when we think again of X, we may think of it, that is treat it in our thoughts, not only as X but as a Y This is clearly not the original judgement that X is Y, for we need not have that judgement *before* us It *is enough* that we *remember*, in the case of a proof for instance, that we proved X to be Y, without going through the proof again, indeed we have sometimes forgotten the proof In accordance with this we may go on to prove something of X which follows from its being a Y. We treat X then as a Y, and yet are certainly not judging that X is Y, because that would mean proving that X is Y, and we have not the proof before us. This example shows that there is a thinking of X as Y, which is not strictly speaking judging that X is Y, though it depends on this judgement. We must here guard against supposing that this thinking is a memory of the preceding act of judging, that is of the proof that X is Y, for this would really mean that we were proving it over again. Memory is necessary but not memory of the nature of the proof; it is the memory simply that there was a proof. The same is of course true if we did not prove that X is Y but had an immediate apprehension of it in a past experience, we should think of X as Y, but this would not be the formation of the apprehension (often wrongly called judgement) that X is Y, for that could only be the original act of perception. Now this thinking of X as a Y is that true meaning of conception for which we have been searching, and its nature becomes clear in

such examples as those above taken. This enables us further to understand how conception, in the sense before us (conception of X as Y), may appear as a kind of element in an act of judgement or of opinion, for instance I may form the judgement that X is Z because it is Y. Here I think of X as Y, but do not properly judge X to be Y, the only judgement being the judgement that X is Z In accordance with this the only thought which has the verbal form of statement is that X is Z. That X is Y is implied, it may for instance be represented by some verbal form like *xy*, but it is not stated explicitly.

§ 129 We are now in a position to restate and answer the ordinary questions about the conception, when conception means conception *of* something as something, or conception *of* X as Y.

In the first place, while it is true that conception in the present sense may appear as an element in a judgement or opinion, or generally in any of the activities of thought which issue in a statement (an element in the manner just explained); yet it always implies such an activity of thought (judgement, opinion, &c) Thus it cannot be an original element of thinking prior to judgement or opinion. To avoid confusion we need to observe that the judgement, opinion, &c, which the conception of X as Y, or the thinking of X as Y, implies, has not necessarily been explicitly stated For example, we may have perceived X as being Y in a number of instances without needing to make a statement about it, though our frame of mind each time is an apprehension which might issue in statement. We may next treat X as if it were in all cases Y, that is have implicitly formed the induction 'all X is Y', without explicitly reflecting on this. The reality of the implicit induction shows itself by the fact that we treat all X as if we thought it were Y Further, we habitually think of X as Y, that is to say we have the 'conception' of X as Y.

From this case we must distinguish another, which is very similar to it but not to be confused with it, the association of ideas. We may experience X and Y often together, but that is not the experience of X as being Y but merely an experience of their association. For instance, I may associate in this way a certain kind of walking-stick with a certain man, but I neither suppose that the man is the stick or the stick is the man, nor do

I treat the man as if he were a stick. Thus, though it may happen that I never think of X without thinking of the Y associated with it, I do not think of X as being a Y, and so have no conception of X as a Y. So, for instance, if I either see or imagine the stick, it may be that I cannot help thinking of its owner, but I do not think of the stick as being the man, and have no 'conception' of the stick as a man.

The next question is whether a conception in the present sense can be true or false The reply here is quite clear. The conception of X being Y is based upon the opinion or judgement that X is Y. But our opinion, or our belief that X is Y, may be true or false, and at least it is always admitted that a statement and the thought corresponding to it must be one or the other. But, if it is false that X is Y, then our conception of X being a Y is also false, whereas it is a true conception, if the statement that X is Y is true.

We are thus led to a doctrine which is directly contradictory to the philosophic view that conceptions as elements of judgement (judgement in the erroneous sense of a mental activity common to all statement) are neither true nor false; for conception in the present sense is one of those elements in an act of thought corresponding to a statement. Here again ordinary language is justified, for we constantly speak of having a true or a false conception of something.

§ 130. But now there is another meaning of conception in non-philosophical thought, which yet is a usage belonging to the stage when thought has become reflective, though not in the technical sense philosophical This is illustrated in such expressions as the conception of duty, of will, of mass, of evolution. In this case also the word conception is followed by the preposition 'of', used however in a different sense. Thus the conception of X would now mean the conception X simply, the preposition 'of', according to a familiar idiom, expressing equivalence, as when we say the city of Oxford The conception of duty would then mean the conception duty, not some conception formed of duty as being so and so. The conception of force again does not mean some conception I have formed of what force really is, for this would be expressed in words different from the word force. Another good example would be the

conception of chemical combination or again of a fluid. As we shall presently see, this use of the term conception is peculiar and restricted. In the most modern (I will not say the most advanced) thinking the technical term concept is commonly used for the sense of conception which we have been illustrating. Concept is a term that we shall have to consider presently; at the moment we are only concerned with the fact of this use of it. These *concepts* do not apply to the whole matter of the science or department of thinking to which they belong Thus for instance in mathematical physics we should hear of the concept of force, but not of the concept of electricity. In chemistry we should hear of the concept of atomic combination, but not of the concept of oxygen or hydrogen. In morals again people will talk of the concept of duty, but not, commonly at least, of the concept of temperance or of courage There is a book entitled *The Concepts of Science*, which certainly does not intend to deal with the conceptions of everything with which science has to deal. An instructive example of the limitation in usage is that, whereas it would not be at all natural to say the concept of a crystal, it would be quite natural to speak of the conception of a crystal; indeed we feel this latter designation to be appropriate Yet it is interesting to observe that the conception of a crystal seems properly to belong to this second meaning of conception, we mean, that is, the conception crystal, just as we mean by the conception of force the conception force. If this is so, it shows that concept does not cover the whole of this second main use of the word conception which we are now discussing. If we were to ask what the concepts of the sciences meant, we should probably be told that they were the ultimate notions, or ideas, or conceptions of a given science, conception being taken in the second main sense of the word By *ultimate* conceptions are here understood the conceptions which on the one hand are peculiar to a science, and on the other hand presupposed by that science The science, as such, does not discover them but assumes them, nor does it even, properly speaking, investigate them in the way of establishing either their meaning or their validity, that is, in general, the business of philosophy. So also in that thinking about morals which is practical and not philosophical, and so far corresponds to science though it is not

science, we do not investigate the conception of will but assume that we can will; we do not discuss the conception of duty but ask what our duties in particular cases are.

§ 131. Let us return now to this general sense of conception of which concept is but a particular species. What is meant by calling force a conception? The last word means, at least, something subjective. But now in mathematical science, for instance, force does not mean a notion or idea or conception of ours: it means nothing subjective, it means an objective fact. Thus, for example, in dynamics the mathematician is not dissecting a conception nor treating of a conception at all in his theorems about forces; he is thinking about the objective fact of force, whether generally or in particular Similarly we are constantly hearing of the conception of cause, that is (in the present acceptance of conception), of the conception cause, but cause or causation does not mean the conception, it means an objective fact There is often associated with the terminology which we are discussing the expression content of the conception, and it is its content which is supposed to distinguish one conception from another Observe that this *content* as content of the conception must be something subjective, because the conception is subjective. If we ask in any particular case what is the content of a given conception, we shall get an answer which seems to designate something objective and not subjective at all. In some cases, where there is a complex involved, we can get an answer verbally different from the conception about which we asked the question. For instance, the content of cause might be said to be the necessitation of an event; but this clearly describes a general fact or what we may call a universal. In the case where there is no such complexity in the conception, the answer can only be a repetition of the word by which we have designated the conception, or else a mere synonym Thus for the content of the conception of mass we should only get mass over again; yet even so the word naturally denotes an objective general fact It is very suspicious that this *content*, which should be mental and subjective, can only be described by a word which properly belongs to the objective. We must suspect here the influence of the old copying theory of knowledge. The content is really something vaguely and confusedly thought of as if it

were some mental entity, corresponding somehow to the objective fact.

If we now ask what is the true account of the relation of objective and subjective in the case, for instance, of the so-called conception of cause (where, by hypothesis, the conception of cause is the same as the conception cause) the correct answer seems to be that, on the one hand, there is the fact of causation which is an objective reality, and, on the other, our apprehension of this fact, which is subjective. The apprehension may possibly be accompanied by some imagining of particular instances in which we think causation is operative, but such imaginations or mental images are not our apprehension nor can cause be imagined There is no room therefore left for a mental something called the content of conception and this is altogether a fiction.

As already indicated, the confusion which is implied in such expressions as the conception of cause, meaning the conception cause, has lurking in it, especially where associated with the fictitious word content, the old copying theory, though probably with not full consciousness: but the main mischief seems to be caused by the popular modern conceptualism. The inability to recognize that what are called abstract expressions (such as will, or heaviness, or necessity) signify real objective facts has led to a conceptualistic view of universals; and this again, perhaps without full consciousness, has become engrained in thought and expression. Hence a universal is habitually, one may even say always, in ordinary reflective writing described as a conception, as if particulars (as in the well-known conceptualistic theory) were the only objective reality, and universals only thoughts of ours.

This second main sense then of conception seems merely a piece of confusion.

If this is so, it is obvious that the two main problems about the priority of conceptions to judgement, &c., and their truth or falsehood, cannot arise according to this use of conception.

§ 132. How then is ordinary language situated as regards the confused and untenable use of conception just elucidated? Does it ever commit itself to such expressions as the conception of mass or involve itself in the difficulties which attend them?

Does it endorse the false idea of content, and the conceptualism implied in treating force and kindred notions as conceptions? The reply seems to be that ordinary language lends no authority to such errors. It speaks of force as force and not as the concept or conception of force, of duty as duty and not as the conception of duty, and, what specially deserves our attention, it never treats these universals as subjective or merely mental, but always as realities. It is only in reflective and philosophical thought that those difficulties arise which drive men into conceptualism The significance of this point can hardly be overestimated; it seems constantly, perhaps always, to be lost sight of in the discussion of the familiar metaphysical difficulties about the universal The same is true of science proper. When science is about its proper business we hear nothing of conceptions, and the theorems about force are about force as an objective fact The only exception is to be found in the prefaces which mathematicians sometimes prefix to the actual investigation. In their prefaces they often fall into reflective thinking and profess to be introducing the learner to what they call the conceptions of the particular investigation This is merely the ordinary mistake, but it disappears as soon as we come to the proper business of the science

The question now arises whether there is any legitimate use of the word conception in relation to such realities as force, mass, will, &c, which have been themselves erroneously treated as if identical with conceptions It might seem to us before reflecting on the meaning of the word that 'conception of' must be of universal application, so that we could speak of the conception of anything whatever But what should we say if any one asked us what was our conception of blue, or of greater? We should find it difficult, in fact impossible, to answer and should ask what the question meant It is not therefore quite evident that the expression 'conception of' is of universal application. Where we found the expression legitimate we had to do with something with a distinct nature X, thought of also as being a Y, so that X and Y were different and distinguishable aspects of the same reality. Thus I may say that my conception of body (X) is that it is a congeries of atoms (Y), where body corresponds to the popular idea and congeries of atoms is some-

thing which has to be learnt from science. On the other hand, in that use of conception which we have found so confusing, the conception of X was not of X as being something different, say Y; it was simply and solely X. So then the answer to the question 'What is the conception of X?' would seem to be that it is X, and therefore nugatory. This is quite obvious in the cases, like blue and greater, where X is simple, that is, not some unity of distinguishable elements (for observe that though greater implies a distinction between at least two distinguishable things, it is not itself any unity of elements). In certain other cases, however, those namely which are not simple, it may seem at first as if an answer was possible that was not nugatory, because we use words different from the word X, or the expression X But this is an illusion, as an illustration will show. The distinction is merely verbal and the answer only gives a synonym. We might say that force is the cause of a body's state of rest or motion, or give some other similar definition. Mathematicians like to say that force is that which changes, or tends to change, a body's existing state of rest or motion, but they would be very hard put to it to explain what they meant by *tends* to change. Or again one might say that cause is the necessitation of an event. But these expressions are only an explanation of the meanings of the words force and cause Cause does not in fact stand for anything different from necessitation of an event, and similarly for the answer given in the case of force This shows that in the answer we are merely giving what is verbally different, in the form of a synonym for the word used in the question, to denote the object inquired about Thus it is really quite as nugatory to ask what is the conception of force or of cause as to ask what is our conception of blue.

We must return to the question whether in these cases there is any proper use of the word conception Conception is at least something subjective What is the subjective element in relation to cause, force, duty, &c ? It seems to be only the apprehension of them, or (what is not relevant to our present purpose) the imagination of particular cases to which they would apply. If we insisted on using the word conception for such instances, we should have to make it mean our apprehension of them. But this is by no means a natural employment of the

term conception; no one, either in ordinary life or in the sciences, would normally call his apprehension of a thing his conception of it. Perhaps it would be right to say that in a given case, when people speak of the conception of a thing, what is really in their thoughts, though they do not clearly recognize it, is the apprehension of the thing. We are thus led once more to the conclusion that there is no proper place for the word conception in such cases as we have just been considering.

It may be asked however whether we should always use the term apprehension; for, strictly speaking, apprehension is of reality, and, though in the illustrations given apprehension may be rightly used, since force, cause, &c., *are* realities, it may be objected that this is not always so and that we might properly speak, say, of the conception of magic, magic being no reality but an illusion to which the term conception, as subjective, seems quite appropriate. This question will be considered presently in connexion with a restatement of the whole problem.

As to the peculiar word concept, there is another use of it. In that modern logic which substitutes judgement for proposition, it is customary to replace the old word term by the word concept, and as in the older logic the proposition was considered to be a combination of terms so here the judgement also is said to be a combination of concepts. In this usage concept seems equivalent to that second meaning of conception where the conception of X ordinarily means the conception X.

§ 133. It has been contended that, whereas several different forms of thinking (knowing, forming an opinion, and believing) may issue in one and the same form of statement, there really is no common universal corresponding to the common word 'thinking' of which they are species, and that the unity of the various activities of the mind lies in their relation to the activity which is knowledge. We shall begin with the consideration of knowledge because it is upon knowledge that the other activities depend and through knowledge only that they can be explained.

If we started from the statement itself we should be led in the same direction; for the proper function of the verbal form called statement is to describe something known to be true; that is to say it is the verbal expression which properly corre-

sponds to knowledge and to knowledge only. The meaning of the statement is not the thought which gives rise to it, it does not mean our thinking as such, nor does it describe anything subjective whatever. It describes the reality which is apprehended as a matter of knowledge, the object thought about, and it may be said to mean what we know of this object. That is why the verbal forms in the statement are forms of the object only. In opposition then to what seems a common tendency it must be pronounced futile to try, as Kant actually does,[a] to find forms of thought by any analysis of the verbal form of statement. Our analysis of it can only conduct to forms of the reality thought about, not to the forms of the thinking about it. Let us consider then the statement and the thought, the act of knowing, which normally corresponds to it, and let us inquire, with the help of the form of the statement, what elements are distinguishable in the act of knowing and whether they are prior to the whole act of thinking, the act of knowledge which issues in the statement.

In the analysis of the grammatical forms of the sentence which expresses a statement [1] it has been maintained that these forms express in the first instance the relation of substance and attribute and in the next place relations between substances: also that, as thought advances, the statement is extended to the more general relation of subject and attribute, where subject is not necessarily substance. In such a sentence the subject is represented as the unity of its attributes. This is a description then of the real object as the unity of such elements. These elements though distinguishable from one another only exist in the unity of the subject. They are elements in the subject of the sentence But, though this is so, it is clear from what has been said of them that they are not elements which are prior to the reality here called the subject; for instance, in the familiar example of matter and form (in the literal sense), neither matter nor form can exist independently, they exist only in their unity with one another.

The act of knowledge corresponding to the statement is the

[1] § 76 et seq.

[a] e.g. *Prol.* § 39, *Kritik d r. V.*, Transc Analytic, Method of the discovery, &c., 1st ed., p. 76]

apprehension of the nature of the object as expressed in the statement and therefore contains the apprehensions of these elements in the object, and these apprehensions are in this way elements in the whole thought or whole apprehension which is the act of knowledge corresponding to the whole statement.[1] But now as the elements in the object have no independent nature but one which has being only in connexion with the other elements, so also the apprehensions of them cannot exist apart from one another, for instance we cannot apprehend surface except as the boundary of the solid. It is true that, the elements in the object being different and distinguishable, we can concentrate our attention on one of the elements in what is ordinarily called the act of abstraction; nevertheless we cannot possibly apprehend the separate nature of the given element save as implying that from which it is inseparable, just as odd cannot be understood apart from number. Thus then the apprehensions which appear as elements in the total apprehension of the object cannot be prior to this total apprehension and can only be had as apprehensions in the having of this total apprehension Hence these apprehensions, which are elements in the total apprehension and correspond to the elements in the object named in the statement or implied in it, cannot be prior in our thinking to the total apprehension, for they can only be had in having it, just as the elements of the whole object can only exist in the object The unit of thought, where thought is the apprehension of a subject as having attributes, is therefore always the apprehension of a unity of a plurality of elements and there is no such thing here as what is called simple apprehension. This is the exact contradictory of such a doctrine as that of Locke,[a] which remains in essentials the popular view.

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§ 134. In the preceding discussion we have attempted to get at the true nature of that distinction an imperfect understanding of which has produced the erroneous distinction of conception and judgement. The total apprehension is what corresponds to the incorrect term judgement, incorrect in the case of knowledge,

[1] This however is not a sensation of ours or any subjective state. *Cf.* infra, p 313 [N B feeling and sensation are not distinguished by the author.]

[a] *Essay*, II 1, § 3, et passim. At the end of § 133 a lacuna is marked.]

because not every act of knowing is an act of judging. We do not distinguish between judgement and conception but between the apprehension which is complete in itself (what we have called the total apprehension, the apprehension of a unified plurality) and apprehensions which are incomplete and cannot be had by themselves but only as elements in the aforesaid total apprehension. In accordance with this it should be noticed that the part of the statement which corresponds to the incomplete apprehension is a word and not itself a form of statement, a point to be returned to.[1]

To the result arrived at certain objections might be made. It might be said that this account of knowledge, whether judgement or immediate apprehension, is based upon statement, whereas the question really is whether there are not apprehensions which are entertained by us without the exercise of what the objector would probably call judgement, complete apprehensions which are not expressed in statement. Besides, the statement referred to relates to things or objects which present this unity in plurality and it might fairly be asked whether the question would not be different in the case of something purely subjective, such as a sensation of heat or smell. It is true, it might be said, that the sensation only exists in myself and has no independent being apart from me, but it is also true that when I have a sensation this fact is not before me, I simply feel the sensation; this is complete in its own quality and this is all that I experience. To this we might reply once more that having a feeling is not the same as apprehending it.[2] But of course the only satisfactory answer must be got from an examination of the fact of this knowledge itself If I am to know a given sensation, I must recognize in it a special quality which makes it the definite sensation it is, which in fact distinguishes it from others and prevents me from confusing it with others, as the quality of a smell distinguishes it from the quality of a sound. This does not mean that we explicitly compare the given sensation which we are apprehending with others; rather the comparison is implicit and we have the sense of the definite quality of the sensation as distinct from others of which we have had experience. In order therefore to make our apprehension of it

[1] p. 316.

[2] p 35, note 1; p 312, note 1

possible there is really a complexity in our thinking and a complexity of a certain kind in the object, and there is no apprehension of the given object, or given element in reality, possible except as an element in this completer apprehension conveyed in the comparison, whether explicit or implicit, with other elements of reality. Thus we do not get a simple apprehension but one which corresponds to a statement (and statement is necessarily complex), the statement, although not necessarily expressed, being one of relation [1] But besides this, if we *apprehend* the given sensation, we must apprehend it as our sensation, which makes it an element in our being, and so we come really to the distinction of subject and attribute, or element corresponding to attribute, as in the former case, and to the apprehension of the sensation as necessarily an element in a reality upon which it is dependent. The apprehension also itself is an element in a wider apprehension. The objections therefore seem to be answered.

§ 135. Confining ourselves still to the statement of knowledge and the thought which corresponds to it, that is to the act of knowing of which judging is one form, we must now ask whether the apprehensions of the elements in the object, themselves therefore elements in the apprehension of the whole object, are by themselves true or false This corresponds to the incorrectly phrased question whether conceptions are true or false considered in themselves

If we call these apprehension-elements themselves apprehensions, as we have done, we may seem to have answered this question implicitly already; for truth is nothing but the apprehension of reality, and thus, if these elemental apprehensions are apprehensions at all, they must be true. This kind of language implies that the given apprehensions can be separated from the whole to which they belong and that, so separated and in themselves, they are true. They would then be what Aristotle calls [a] thoughts apart from synthesis.[2] He says that taken apart from the synthesis in thought, the thought that is

[1] Cf p 312. [2] Cf. § 126.

[a] Vide p. 297, note 1 The reference is to *τὰ ὀνόματα αὐτὰ καὶ τὰ ῥήματα ἔοικε τῷ ἄνευ συνθέσεως καὶ διαιρέσεως νοήματι. De Int.* 16[a] 14 Cf *De An.* 430[a] 26.]

which corresponds to the statement, they are neither true nor false, though as we shall see he came to modify this doctrine.

But now, in strict accuracy, these apprehensions, which are rightly so called, cannot be separated in apprehension from the wholes to which they belong. This gives us the answer. The elements of the object of which they are apprehensions have no independent nature and no reality at all except as elements in the reality of the whole object. Similarly these apprehensions themselves have no existence at all as apprehensions except in the act of thought which is the total apprehension of the object. The result then clearly appears to be that these thoughts which are elements in the whole thought constituting the act of knowledge and which correspond to what are erroneously called conceptions in the ordinary distinction of conception and judgement are true, but not true as taken by themselves, for they cannot possibly be taken by themselves. They can verbally appear to be so, but there is no real thought corresponding to the verbal expression. They cannot really come into our thought at all except in the wider apprehension to which they belong. The question then: 'Can these elements when taken by themselves be true or false?' illustrates once more a point, on which I have often insisted, that a question itself may be fallacious in form and thus imply at the very start some erroneous view. The fallacy here is that the question implies the false view that the elements can be taken by themselves.

There are some qualifications to be made; they need however cause no difficulty. In a statement the nominative case to the verb may be the name of something which has been apprehended as having a certain nature before the given statement was arrived at. The statement, then, expresses some new knowledge of it, that is, the apprehension of something new in it. Thus the object as at first apprehended may seem like an element in the object which is the subject of the new apprehension, and the apprehension of it therefore may appear to be an element in the new apprehension. If this were so, it might seem that the first apprehension of the given subject could not be had by itself, according to the principle developed above. But this is not wholly correct. If the subject of the sentence is a dependent element in the existence of some object, it is not true that it

is an element in the object which is the subject of the new apprehension, for it is identical with this object. Nevertheless it remains true that the apprehension of it cannot be had by itself, because the apprehension of it, which is independent of the thinking that issues in the given sentence, was gained in another and preceding apprehension in which it was an element and therefore not to be taken by itself The case however is different if the subject of the new apprehension is an object which can be apprehended by itself, a substance in fact. This again is not an element in the object of the new apprehension but is identical with it, and, as being a substance, involves an apprehension of itself which can indeed be taken by itself but is precisely the apprehension which represents a whole. The same is true of any other noun in the statement which is the name of a substance. This at once suggests the question as to how we can distinguish such a noun from a sentence, and the thought which corresponds to it from the apprehension which corresponds to a sentence, since both the noun and the complete grammatical sentence seem to correspond to the apprehension of a substance. We may be quite sure that the difference in grammatical expression has a real importance. Suppose we have a statement of the form X_1 is Y, where the nominative case means a substance already apprehended as having the characteristics symbolized by X (or it may be by the full X_1). Then there are two cases. First, we may actually apprehend this character of X_1, and from that go on to the apprehension of it as Y. This is expressed in the statement X_1 is Y. Or, secondly, we may merely remember that we apprehended X_1 as X, but not be actually conducting the apprehension. In the first case, the verbal statement which accurately corresponds to our thought is 'this (i.e X_1) is X and, as being X, it is Y'. In the second case, the apprehension of X_1 as X is presupposed and we are not concerned to state it. It appears only as an element presupposed in the apprehension which we are concerned to state as being the new apprehension Thus X_1 has not the form of a statement, being a noun or noun-phrase in the sentence, while X_1 is Y has that form.[1] In the doctrine we are criticizing X_1 would be said to be a conception, and X_1 is Y the judgement

[1] § 134.

in which the conception X_1 is an element. As contrasted with this, the result arrived at above may be put shortly thus: the verbal expression X_1 implies an apprehension and, in the manner explained, involves the memory of it, but does not state it, whereas X_1 is Y states explicitly what is apprehended.

Here we have perhaps come across one of the main reasons why X or X_1 is called a conception. As we have already observed, we should not naturally call anything which we recognized as an apprehension by the name conception. Now X_1 does not here represent an apprehension which is being realized (as for instance an act of perception), but an apprehension remembered to have been experienced (associated in most cases with an imagination or memory-image). There is an apprehension of the object in an indirect sense, in so far as we remember that there was an apprehension, but the reference to the object is remoter than it was in the apprehension of the object which is remembered to have been experienced. The word conception lends itself to this, because it seems something in our mind detached from the object and so is regarded as something 'conceived' as opposed to 'asserted'. Probably also the association of the memory-image helps to conceal the vagueness of the terms conceiving or conception. If we pressed the question as to what the conception was, we should find that, while there was virtually a confusion of it with a mental image, the reply, when attention was once awakened by our question, would be that the conception was *not* a mental image. It is nevertheless thought of, in some obscure way, as though it were a kind of special mental entity This fiction, for it deserves no better name, seems to have greatly influenced psychology, and we regularly find in manuals of that science a chapter on the 'formation of conceptions', in which, one may be allowed to think, there lurks a fine confusion of the mental image with reminiscences of conceptualism and even of the old copying theory of knowledge.

The same considerations apply to nouns other than those in the nominative case, and to any other words in the sentence and the thought corresponding to them, when the apprehension of that to which they refer has preceded the act of thought which corresponds to the given statement. In 'lead is heavy'

heaviness would be said to be the conception synthesized with the conception lead.

§ 136. So far we have confined ourselves to the act of knowledge and to the statement in which it issues, inasmuch as it is from the act of knowledge [1] that the other forms of thinking have to be explained. It will now not be difficult to deal with these other forms, namely opinion and belief.[2] For the present purpose belief may count as opinion. Suppose for simplicity that, in the instance X_1 is Y, X_1 and Y refer to realities previously apprehended and therefore true in the sense explained, but that the statement itself is only a matter of opinion to the person pronouncing it. After this he will think of X_1 as Y, so that we might symbolize a new opinion by 'X_1 (Y) is Z'. Here it will be observed that we have a parallel to the first sense of conception which we discussed in the case of knowledge, the conception of X_1 as Y. The difference is that, while in both cases X_1 is thought of as Y, the first depends on the true apprehension X_1 is Y, whereas the second depends only on the opinion that X_1 is Y. In the first case the connexion of X_1 with Y is known: in the second case it is not known and, though surmised, remains a problem The consequence is that, if we allow the expression conception of, the true conception is that which corresponds to the true apprehension X_1 is Y, while the second is not a true conception in the full sense, but only in the qualified sense represented by the phrase problematic conception. Where then this use of 'conception' corresponds to a matter of knowledge, the elements in the object signified by X_1 and Y are understood and known, as well as their connexion. In the case of opinion, the connexion is only a matter of conjecture more or less probable [3]

The problematic conception seems rightly called untrue if the opinion that X_1 is Y on which it is founded is itself untrue. In the example taken the untruth does not lie in X_1 and Y, or rather in the thoughts corresponding to them, but in the assumption of their combination. This naturally leads to the question whether the problematic conception, which may be untrue in the sense explained, must always show such a complexity, and consist in thinking of a combination of real elements as possible

[1] §§ 10, 47 [2] Part II, ch 3 [3] pp. 260 and 267.

which is in fact non-existent and impossible; or whether it is possible that a thought without any such complexity, what is usually called a simple idea or a simple conception, can also be false. If we were concerned with truth and knowledge only, the so-called simple conception, or simple idea, would be either the apprehension of something simple and without complexity in the object, or the thinking of it as real through the memory that we have apprehended its reality. And here it must be remarked that the existence of such simplicity is not affected by what has been said above of the multiplicity which even a sensation, however simple it may seem, must involve, both in the comparison of it with other sensations and in the reference of it to its mental subject for notwithstanding these references the element is properly called simple if it is not itself a unity of discernible differences. An extreme case would be a relation, since it implies two different objects at least But a relation may be perfectly simple in the sense that its nature is not a combination or synthesis of different elements. Consider for instance the relations greater than, or equal to. Though equality must be between two different things, its own nature is perfectly simple and presents no unity of elements. We may see the same again in an instance like the quality of white colour, and such examples could be multiplied.

§ 137. We return to the question whether the so-called simple idea or simple conception can be false. This conceptional terminology is not only vague but hides the true difficulty which occurs in the putting of the question. We want apparently some state of consciousness, concerned with something or other which is quite simple, parallel to the state of consciousness which consists in the apprehension of a simple object, or rather perhaps of something simple in an object. But now what could this be and what is it that could correspond to the simple object? Let X be this simple somewhat for which we are looking. By hypothesis X cannot be anything real, for the apprehension of it would necessarily be true, and the mistake, if possible at all, would consist in taking this X to be real, though it is not anything real. We then still want to know what this X is, for it clearly will have to be something for consciousness. If it were a sensation, for instance, it would be a reality in the widest

sense of the word real as opposed to the imaginary. Nothing seems to be left for it except that it should be an imagination. But, if it were that, we should recognize that it was so, for we never confuse an imagination with an experience, and we should not take X to be something real; and hence the supposed mistake could not arise. This should be, in philosophy, a decisive argument, but it will not convince those who, like Hume, make a very common mistake about imagination, more or less consciously confounding the imagination with something which is of the same kind as the corresponding reality.[1] The imagination is in truth totally different in kind from the real object imagined; the imagination of a sound, for instance, is not itself a sound and cannot be mistaken for one. If it is objected that in a dream we mistake an imagination for a reality, the reply is that we have now to do with the waking and not the dreaming state. Moreover, the dream-object is something quite different from the imagination. It is indeed probable that the two are usually confused in speculation under the one term mental image, but their difference is a matter of consciousness, we know that the most vivid imagination for instance of a band playing is something totally different from our dreaming that we hear a band playing.

But, if we allow this false account of imagination, so that the imagined sensation for instance would differ (as Hume thought) from the real sensation only in vividness, the imagined sensation would be an experience just like its prototype and just as real; so that here again there would be no room for the so-called false conception. Finally, it is a commonplace that the mind cannot itself create a new simple idea. The assertions of Locke and Hume, for instance, to this effect are familiar According to them we can have no imagination of the absolutely simple of which the original is not an experience, and it will be admitted that their doctrine, in spite of its overstatement and whatever the defects of its expression, is in some important sense true.

§ 138. No one supposes, of course, that the imagination or mental image of a house is the same as the experience of an actual house. Nevertheless there is a tendency to think of the imagination of a sensation as if it were itself a sensation, though

[1] This is a mistake which Mr. Bradley makes with fatal consequences.

fainter in intensity than the sensation of which it is the image. Thus with Hume the *idea* (imaginary image) of a sensation differs from the *impression* of the same only as something less vivid. There is doubtless a great temptation to this view, for the imagined sensation, e g. when we remember an experienced sensation, is said to be like the one previously experienced and so may be called a mental image of it. Thus the two might seem the same in kind, for it might seem that what was like a sensation must be itself a sensation. On this view, when we remember a sensation of heat (e g.) we should imagine it and this would mean that we were conscious of an actual sensation of heat; not the former one, of course, but another sensation of heat resembling the former one in the quality of heat, and that we were conscious of the resemblance. If this were so, there could be so far no reason why the mental image of the previous sensation should be any less vivid than the previous sensation: yet writers, like Hume, who practically hold the view before us are careful to say that it must be less vivid, indeed Hume says that there is a degree of vividness which no idea can attain. In the theory as such there is no justification whatever of this, but it is easy to see how the necessity for the assumption arises.

Suppose we think of a pain under which we suffered much. We imagine it and, if the mental image were itself a pain of the same intensity, we should suffer as before; but we do not. We remember a dazzling light, but our mental image is not accompanied by the pain and inconvenience of dazzling. It is thus necessary to make the mental image at least a less intense sensation than the original, if it is to be a sensation at all. But the truth seems to be that this modification is not enough, for the mental image would still have to be painful even though less painful and there must be some suffering even though little; but there appears to be neither the one nor the other.

It seems however possible in the case of some kinds of feelings, though apparently not in all, that the memory of the past may affect the bodily organs and produce a new present actual sensation like the previous. Thus, if I see something the eating of which made me sick in the past (e.g. green elderberries), it does seem as if I not only remembered the past sickness but actually

experienced a sensation of sickness It would be a confirmation of this if vomiting actually ensued and it would be interesting to know if this ever really happened to anybody.

But in the first place this actual sensation is not the mental image of the old one and the latter is not painful. Moreover this is not a mere contention, for we should recognize in our ordinary experience the difference between this feeling of sickness and the mental image of the one previously experienced. If, however, this should be disputed, there are other considerations which seem decisive

Suppose the image of a past sensation, such as is present when we remember a past sensation, is itself a sensation, then of course it is as real an experience as the former sensation. The nature of its cause makes not the slightest difference to itself · in brief it is an experienced sensation and as much experienced as the original sensation of which it is said to be the 'image'. The analysis of the act of memory would then be this We had an actual sensation S_1, we have now another actual sensation S_2, and we remember that we had the previous sensation S_1, and we say to ourselves that it was like S_2.

This leads to two difficulties, each fatal to the theory. (1) By hypothesis the so-called mental image of S_1 is S_2, and S_2 thus 'represents' S_1 Clearly then, as S_2 represents S_1 in quality, which means that S_2 as a sensation must be of the same kind or quality as S_1, so also it must represent S_1 in intensity, and must therefore, to do this, be itself an intense sensation. Or, to put it otherwise, suppose S_2 of appreciably less intensity than S_1, and Σ_1 a previously experienced sensation of intensity not appreciably different from S_2—an experienced sensation may have of course any degree of vividness and intensity less than that of S_1—then S_2 would represent Σ_1 and, just as a sensation of less intensity than S_2 would represent not a sensation Σ_1 but a sensation Σ_2 less in intensity than Σ_1, so a sensation of greater intensity than S_2 (and not S_2) would represent the sensation S_1. Thus the mental image of a previously experienced intense sensation, if itself a sensation, must be an intense sensation. If then I remember an intense toothache, I must have an actual sensation of intense toothache and suffer accordingly, which is contrary to experience.

Suppose again we had what we call an actual toothache but of low intensity, we should not say that this was like the previous sensation, except in intensity, but should say it was in a (for us) important characteristic not like it while we should estimate a toothache of similar intensity as like it. Now, as the imagined sensation is, by hypothesis, itself a really experienced sensation, we must think exactly in the same way about it and thus we should think that the imagined sensation (which must be of such low intensity, if a sensation at all, that we do not suffer from it) was not like the past sensation We should in fact only think 'imagined sensations' to be like past experiences when they were appreciably of the same intensity. And, if it happened that 'imagined sensations', being also (it must be remembered) actual sensations, could not exceed a certain degree of intensity, the result would be that we should have mental images of all sensations previously experienced up to that degree of intensity, but of none appreciably exceeding it. Thus, if the presence of the mental image were necessary to memory, we should not even remember sensations which pass beyond a certain intensity, an intense toothache for instance could not be remembered

(2) The mental image S_2 is an experienced sensation, as actual as the previous sensation S_1 of which it is called an image, in the theory now in question, and it would not be an 'image' at all unless we not only experienced it but estimated that it was like the past sensation Now this, being memory, is not a mere consciousness that we have experienced something of the sort before without knowing what sort—not the mere recognition that this kind of sensation is already familiar—but involves a knowledge of what it was that was like the present sensation. We say the past sensation was like the present and we therefore compare the two together. We have not got the past itself however to compare. We must have some representation of it. This representation must be the mental image of S_1; thus S_2, which is to be compared with it, is distinct from it Hence either S_2 is *not* the mental image, or we have a second mental image S_3 which must equally be a present actual sensation: and this process will obviously go on *ad infinitum.*

Or we may put it like this. If we are to compare the past

sensation S_1 with the mental image S_2, itself a present sensation, we must remember the past sensation and it is what we remember of it that we compare with the present sensation S_2. Certainly, if we do not remember it in any way, no comparison will be possible. But, by hypothesis, memory is the possession of a mental image together with the 'judgement' that it is like the past. It is then a mental image which has to be compared with S_2. Thus, as before, S_2 cannot be the mental image or we are led to the infinite process.

It seems then to follow that the imagination of a past sensation cannot be identified with a present actual sensation of the same kind

§ 139. There are also some special considerations which confirm this In the case of some sensations the memory of a past sensation, however intense the sensation may have been, does not seem capable of producing a real present sensation like the feeling of sickness already instanced—a sensation which, it must be remembered, would be distinct from the mental image. For instance, we may remember some great volume of sound, as such a *fortissimo* passage of an orchestral piece. We may say we 'fancy' we hear the blare of the trumpets, but we do not suppose in the least that we have an actual sensation of sound ('Heard melodies are sweet but those unheard are sweeter'). There is indeed nothing here analogous to the feeling of sickness which seems to exist in the case we have considered.

Sound gives a further and more decisive confirmation of what we are maintaining It is of the essence of the perception of melody as opposed to that of harmony that a relation should be perceived or apprehended between successive sounds as successive. For this it is necessary that a past sound should be in some sense retained it must be in some sense remembered, for clearly without memory we should only be conscious of the sound at the particular moment and not of its relations to the sound which was in the past and has ceased. Now, if the retention were the retention of a memory-image of the sound and this last were an actual present sensation of sound, the comparison and memory necessary to melody, or rather the perception of melody in a series of sounds, would result in the simultaneous presence to consciousness of the sounds constituting

the series, or rather of actual sounds equivalent to them. This of course would yield the perception of harmony, if the interval between the successive notes were consonant, and of discord, if they were not; it would not yield a consciousness of melody. The perception of melody then necessitates that the retention of the sounds in the memory, after they have ceased, should not be, nor involve, the presence and consciousness of actual sensations of sound The imagination of a sound is not itself a sound. The mental image, or the memory-image, of a sound is not itself a sound.

It must be observed that this has a serious consequence for a theory of memory which seems much favoured by psychologists. It is supposed that to a given experience—say a sensation of sound—corresponds a certain definite activity of the nerves, to which they are excited by the experiential stimulus. Memory is explained by supposing that the nerves are somehow (it cannot be by the experiential stimulus) stimulated again to the same kind of activity The nerves in short have a certain function to which they are stimulated in experience and they are in memory stimulated to perform it again. But, if so, the activity being the same in kind each time, if the first activity conveyed the consciousness of an actual sensation, so must the second; and the memory of a sensation, or the imaginary sensation, would itself be a sensation This is of course impossible and therefore so also is this theory of memory. The difficulty is doubtless glossed over by assuming that the activity, in the case of the memory image, attributed to the nerves, is weaker or less intense than in the case of the real experience, but as the foregoing shows this makes no difference.

Mr. Bradley, though he does not offer this physiological explanation of memory, falls into the same error.[1] In Association what he says happens is this The soul in an experience has two elements in consciousness, say A and B. This experience is called a 'function' of the soul. In 'Association' it is supposed that the function is for some reason or other repeated and thus the image (or reality) of A is followed by the image of B. But as the original function was an 'experience' so must the repetition of it be. If A and B were sensations, the repeti-

[1] *Logic*, II. II, ch 1, §§ 30–31.

tion of the function must mean the presence of actual sensations like both A and B. The confusion is most obvious when, on the second occasion, an experience of A actually occurs but (by hypothesis) not an experience of B.

§ 140. We will return later to this question of simple ideas, &c., in order to devote to them some more thorough consideration.[1] For our present purpose it is enough to say that an entirely arbitrary creation in imagination is impossible and to concede that our power is limited to effecting in the imagination new combinations of simple elements, derived from experience.

The result we appear then to have reached is that in any statement the 'simple idea', or 'simple conception', must be true. Observe that the formulation of the supposed result is quite easy as long as we make use of this vague language about conceptions and ideas But, if we substitute what seems to be the true attitude of thought confusedly represented by these words, we shall find it scarcely possible even to put the question; so that the answer is really nugatory What is the simple conception? It is clear at any rate that it derives its meaning from the simple property of the object The only possible answer seems to be that the simple conception is the apprehension of the simple property. But that is necessarily true and so the question could not arise Now, as we have seen above, we can't here treat the conception as being the thinking of the thing to be so and so, *or the treating it as so and so* The only remaining possibility then seems to be that it is the memory that we experienced the given quality, or else the mental imagination of the given quality But no one, in ordinary life, would call his memory of X_1 his conception of X; and the other alternative, that by the conception of X we mean its mental image, is evidently false Once more then the word conception has properly no application here at all. The ordinary natural language bears us out, for no one would ever use such expressions as my conception of blue, of hot, or of loud. If it be objected that, inasmuch as we do meet with such expressions as the conception of force or of duty, we are here neglecting the evidence of language, we reply that the normal language is entirely in our favour; the apparent exceptions belong only to reflective thought which has advanced to the philosophic stage. Indeed

[1] Part III, ch. 5

this use of the term conception is mainly due to the false philosophic theory of the universal called Conceptualism.

One may be allowed to repeat the opinion that the writers who use the term simple conception in such ways as the conception of force, of cause, or of change are thinking of a mental *something* dangerously like that utter fiction the mental image, and that psychology in seeking for an account of the formation of conceptions is mainly, if perhaps not consciously, affected by the same fiction. In spite of chapters devoted to the supposed psychological processes by which this conception is arrived at, we must stoutly pronounce it a confused illusion.

§ 141. If the foregoing investigation is correct, there is no active apprehension which is of the entirely simple. The ordinary forms of the statement probably began with the distinction of subject (substance) and attribute, the later and more reflective thinking developing at last the form in which the attribute itself may appear as nominative Probably also the form which states relations, between substances in the first instance and afterwards between elements of reality in general, was developed soon after the form of statement concerning substances Now in our present developed experience it always happens that the substance, or subject, itself has been apprehended before, and similarly the attributes. And, if we look at such previous apprehensions, we find the same thing must be said of them, and so a further apprehension such as corresponds to statement must be presupposed But this regress cannot go on for ever. A common way of avoiding the difficulty is to say that the regress is not always to a statement (or rather to the thought corresponding to a statement) but to certain simple ideas such as white, straight, or hot, and that starting from these as material we build up statements from them. This is the very doctrine we have been denying No doubt the infinite regress of which we seem in danger, on the view we have been defending, greatly strengthens the popular view that we begin with simple ideas in the manner of Locke, who here as usual is elevating the popular view to philosophy. Once more we have occasion to state an important philosophical principle. If we find on careful analysis that a given attitude of consciousness involves and presupposes a considerable complexity of what are erroneously called conceptions (more properly apprehensions),

a complexity very much exceeding our expectations; if that attitude of consciousness further implies a much more developed phase of consciousness than we were prepared for, one perhaps difficult to reconcile with some theory which we have been accustomed to rely upon, we are in great danger of being led to whittle away the facts to suit our prejudices and theories. This does much harm to the development of either sound psychology or sound philosophy What we have to do uncompromisingly is to try to find out what a given activity of thought presupposes as implicit or explicit in our consciousness, without allowing these precious results to be interfered with by any preconceived opinion I may give an instance of a very simple character, the condition of anger Plato has already told us [a] that anger involves a certain amount of reason, and it really involves a very considerable development of consciousness; more indeed than we might expect before inquiry, inasmuch as anger seems to be a rudimentary emotion, being found in the very young and, generally, in the dullest and most unreflective consciousness But, when we contrast it with the mere consciousness of pain suffered, we see that it implies the idea of the causality of another person. It implies therefore not only that the consciousness has already apprehended the fact that there are other persons, but the category of causality too, because the hurtful act is attributed to the other person, or there would be no room for anger. But we must go even further than this; the categories of will and of intention are both implied. There would be no anger unless it was thought somehow that the aggressor had caused, willed, and intended the mischief suffered. This is perhaps more than we expected, but we must not on that account suppose any of the elements absent. They are absolutely necessitated by the fact of anger and, if they are not there, there is no anger. This is the true method, we must try to get at the facts of consciousness and not let them be overlaid as is so commonly done with preconceived theories. We may know nothing whatever about the first beginnings of a given state of consciousness, but we may perfectly well know what it must be whenever it does appear. Similarly in the case before us, we know next to nothing of the beginnings of the apprehending consciousness, yet we are perfectly well able to say what the

[a] The reference is to *Rep.* 440, presumably.]

act of apprehension presupposes, provided only it is a true apprehension. So far we are not concerned at all to say how the first apprehensions came about, but we know what they must have been and must have presupposed when they *did* come about.

It will have become evident that the regress ordinarily supposed to the simple idea is quite impossible, because as we have seen the simple idea cannot be apprehended by itself. If it be true, as psychologists seem all to assume, that consciousness begins from sensations only, we have to reply that there is a danger here of a confusion in the use of the word consciousness. We must repeat that that consciousness which consists in having a sensation is not the same as the consciousness which consists in the apprehension of a sensation. If again we assume what, unless I am greatly mistaken, is the opinion of psychologists, namely that the first beginning of apprehending consciousness is the noticing of a sensation, then we should contend that such noticing implies a contrast more or less dimly between the given sensation and the context of previous experiences. And further, the beginning of the apprehending consciousness, not being in the apprehension of a single sensation, lies either in the apprehension of the different quality of two sensations, in an act of consciousness in which they each for the first time become matter of apprehension, or in the apprehension of the quality of the given sensation in vague contrast with the preceding context of sensations. This latter does not mean that the vague apprehension of such a general context precedes the experience, but that the context itself only becomes matter of apprehension in any sense however dim in this same act in which we 'notice' the given sensation. If this noticing of the quality of a sensation involved its reference to ourselves, we should have the apprehensions of subject and attribute, neither, as before, presupposed but both becoming matter of apprehending consciousness in one and the same act. It must not be forgotten that the first kind of apprehension we spoke of is not naturally expressed at all in a statement; the reason of this has been explained already. It really also involves what one might call the unconscious use of the distinction of subject and attribute, in so far as the two contrasted sensations appear as members of our general apprehending consciousness, however vague the apprehension of the two sensations, or of a given one of them, may be.

XV

THE QUANTITY OF PROPOSITIONS AND THE UNIVERSAL

§ 142. PROPOSITIONS are usually distinguished in point of quantity into Universal (all A is B), Particular (some A is B), and Singular (this A is B) propositions

The distinction of the particular from the universal is sometimes erroneously stated thus · the universal judgement attaches its predicate to the whole of its subject while the particular attaches its predicate to a part of its subject. Now clearly a statement would not be a statement if it did not attach its predicate to the whole of its subject. In the form, some A is B, B is attached to a part only of A, or more accurately to a part only of what is A. But *some* A is the subject, not A; and to the some A which is meant, the true subject, to the whole of that the predicate is attached What is common to the statements, all A is B and some A is B, is the class to which their subjects belong, the class A But the subject of the first is the whole class A and of the second only a part of it. The cause of the illusion, that there is a common subject, is that in both statements alike the only definite part of the conception of the subject *is* the same, namely the conception of Aness, the rest being, in the case of the particular statement, mere indefinite particularity. But further, we must call in question the right to make such a distinction at all between the universal and the particular statement The sentence, some A is B, at once provokes the question, what A is B? If we are starting from the particular in some A is B, we must know what A is meant and so must those whom we are addressing if the statement is to be accepted. We see that in this case the verbal expression is imperfect and that the true form, which would correspond to the actual thinking, is CA is B, or all CA is B, which is a universal statement. But now there is a second way in which we can reach the statement, some A is B, namely, by immediate infer-

ence from all B is A. Here it might seem that the further determination of some A need not be possible. Now observe, first, that here the thought does not really start from an indefinite particular but from a universal statement as before, from all B is A and, secondly, that some A has not really the indefiniteness which it seems to have in the verbal expression, for it really turns out that it is that part of A which constitutes the whole class B, and which is therefore known under a definite universal. It is again the form of the expression which is imperfect, for the immediate inference should be that some A constitutes the whole of B But, again, we may appear to get the particular form, some A is B, from the universal disjunctive all A is B or C or D (which we must notice is a universal statement, in the true sense of universal) Yet even in this case we may be able to say after all what A is B In geometry, triangles being either equilateral, isosceles, or scalene, we do not say some triangles are equilateral; at all events we do not naturally use this form of expression, and we never start from such a form. We know that equilateral triangles result from a certain definite construction, and in Euclid that is the only way in which we learn that triangles can be equilateral, for his first proposition of the First Book is not merely a way of constructing something that we already know to be possible, it is really our first information that the thing is possible; the definition of equilateral triangle which has preceded being, until the demonstration appears, as some say, merely nominal, or as it may be better put, problematic For the statement, some triangles are equilateral, the mathematician has no use, the proper scientific statement which corresponds is that three equal straight lines may be so placed as to form a triangle. Thus it is clear that the statement, some triangles are equilateral, is only derived from this universal statement by conversion, a case which has already been considered

This account does not suit such an example as 'some lines are straight', lines being divided into straight and curved, because we cannot give a general construction of a straight line. A general account may be given which covers all cases. The statement, some lines are straight, doesn't occur naturally; if it is made, we ask *what* lines are straight, and the only answer

possible is, straight lines are. We must go behind the verbal expression and ask how the statement can be got; what the thought is to which it corresponds. We get it in the apprehension represented by the disjunctive statement 'a line must be straight or curved', or 'linearity must take the form of rectilinearity or of curvilinearity'. This is not a statement about something indefinite, some undefined cases of a universal, but about the quite definite universal linearity. Some lines are straight, therefore, only represents an element in the apprehension or judgement, expressed in the disjunctive statement. It can only be judged in that statement and not by itself, and is really an imperfect verbal expression of the thought which underlies the disjunctive statement. This is why the statement, some lines are straight, does not arise naturally either in science or in ordinary statement. It is an incorrect form of expression. It follows therefore that we must maintain that the distinction of universal and particular statement cannot be recognized in this sense, for the particular always turns out to be the imperfect verbal expression of a universal statement.

Why then does the particular form exist in ordinary language? The facts seem to be these Suppose for example we have 'all CA is B'; we may put this in the form some A is B, simply to characterize the relation of our statement to another statement which concerns A and B only, namely, all A is B This we do when one statement, CA is B, is considered as evidence in favour of '*all* A is B'. Wishing to prove that *all* A is B, or at least to find out whether this is so or not, we put our knowledge, all CA is B, in the form some A is B, omitting the C because our ultimate object is to omit the C. We indicate by the word 'some' that our knowledge is not yet sufficient to do this. Or, if we desire to refute the statement no A is B, we put all CA is B in the form some A is B because that is enough for our purpose. The C as such is indifferent, though we should be obliged to supply it if we were asked to substantiate our statement. This is the explanation of the under-statement of our knowledge. The statement we make is relative to the object that we have in view and yet it ultimately depends for its validity on the special distinction which we have chosen to omit.

Lastly, we must call in question the usual way in which the

distinction between the universal and singular statements is expressed. They do indeed differ, but the difference between them is not properly one of quantity. All A is B normally, and in demonstrative science always, means not merely that the multitude of a class, exhaustible or inexhaustible, has an attributive ascribed to every member of it, but that the universal nature of the class necessitates the corresponding attribute. It is not a matter of quantity and is in no sense a progress by any kind of quantitative addition. This A is B, in its normal use, is employed by us in cases where we are not able to assign B to any universal manifested in 'this A'; the universal statement all A is B differs from the singular, this A is B, not by adding more A's, or telling us that other A's are B, but by telling us the reason why this A is B, this A is B *because* it is A, which means that A as such necessitates B The distinction between the forms is thus the distinction of the 'fact' from the 'reason why', not the distinction of the one (or some definite number) from the all.

§ 143 Suppose we have the statement every X_1 is Y, or all X_1's are Y, where X_1 and Y refer to objects of ordinary experience or of scientific knowledge and not to things of which we come to have a conception for the first time in philosophical or reflective thinking We are accustomed to say that Yness is a quality which all the X_1's have and that it is something which they have 'in common', or that it is 'common to them all'. This Yness we then call a universal just because of the fact of its being common to all the particulars which are X_1. Thus we think of it as a unity in a multiplicity and in the whole of a certain multiplicity. Hence it is called a universal, and we treat this characteristic of it as if it were its essential nature, so much so that its name 'universal' is derived from this. It would seem therefore as if this being common to a number of particulars was essential to its nature.

Yet if we consider any particular instance of Yness, as for instance any X_1, it has this quality Yness in itself, and the distinction of what we call 'universal' and 'particular' seems to be in it, taken by itself. For instance, suppose Yness is circularity, then every particular circle has what is called 'the universal' (equality of radii) particularized as the equality of its particular radii.

This is confirmed by the fact that through consideration of a particular circle we arrive at truths about circularity in itself, with no reference whatever to the particularity of the circle before us (for example to the special length of its radii) and, what is of more importance, with no reference to any other circle in which 'circularity' would appear. The distinction therefore seems to exist within the particular itself, and to depend in no way on the presence of the so-called 'universal' in a *multiplicity* of particulars. This is confirmed by the fact that it makes no difference whatever to the distinction Yness (circularity, for instance) recognizable in a given particular that the number of other particulars showing the same characteristic should be diminished. It would make no difference if all the rest ceased to exist; the given particular would have its nature in no way altered, and yet what we have called the universal element recognizable in it would no longer be present in or common to a multiplicity. For instance, a sport might appear once in the world of plants and be destined never to be repeated, and yet we should recognize its general type. This would be impossible if universality as such was necessarily presence in a multiplicity.

It is true on the other hand that the recognition of what we call the same quality in different particulars may lead us to distinguish its nature and recognize it in abstraction, as we say, from the particulars themselves, and it is on this account probably, nay certainly, that we tend to look upon this unity in a multiplicity as its necessary and main characteristic. But the considerations to which we have been led seem to show that this is quite erroneous, that the peculiar nature of the universal does not at all lie in its presence in many particulars, that on the contrary it is because it has a certain nature which is independent of presence in a multiplicity that it can be the same in a multiplicity. Thus in Aristotelian phrase this presence in particulars (many) is not of the essence of the universal, but an 'accident'. (The usual terminology ('universal'), including that of Aristotle (*κατὰ πάντος*), unfortunately gives the contrary impression.) This being so, the puzzle of the class with only one member ceases to be a puzzle, and we may find the result just arrived at of great help in solving some of the familiar difficulties.

What we have now to do, clearly, is to appreciate what the so-called *universal* essentially is. Possibly, among other things we may then discover why it is that we sometimes feel a difficulty about calling something a universal although it can appear as the attributive to many different nominatives.

§ 144. The universal is not a mere thought of ours. It is something we ascribe to reality itself and suppose to be identical in particular realities. In experience and in science (as Plato saw) we always treat it as if *strictly objective*. Our difficulties only arise in our philosophic reflection upon this fact. Now just as it is the very nature of the universal to be a unity which must take specific forms (number *as such* must be odd or even), so also it is its nature to be particularized The universal is the universal of particulars, and its reality cannot be separated from them any more than its unity can be separated from its species The distinction of universal and particular is ultimate and self-evident; the mistakes and difficulties made about it result from trying to explain it in terms of something different from itself It requires no explanation; nothing can make its meaning plainer, and what that meaning is we realize in particular cases. It is above explanation, for we are constantly using the distinction, and in any explanation of anything whatever *must* use it and presuppose it.

In the above, the expressions 'it is *the very nature* of the universal to be a unity which must take specific forms' and 'it is its nature to be particularized' are chosen to bring out the fact that differentiation or different species of the genus, and individualization or the individuals, are nothing outside the nature of the universal and therefore do not require to be reconciled with it. The universal as genus is not something in the specific universals with the differentia added to it as something outside it, so that the two together constitute the species (as though the species agreed in the genus only and differed in something which was not of the nature of the genus). Green and red agree in being colour, but what they differ in is precisely also colour, their *differentia* is not outside the nature of colour, nor are *differentiae* in general outside the nature of the genus they belong to. That is expressed simply by saying that the species are forms which the genus-universal takes. This unity

of the genus in the manifold of its species we understand in the particular instances of it, thus number is either even or odd. It is a unique kind of unity in multiplicity and we never think of explaining it or of expressing it in terms other than itself. Plato, it is interesting to observe, though recognizing the fact of the plurality of species of one genus, never made any difficulty about it. We say without feeling a difficulty 'this is a *kind* of colour', 'this is a *kind* of surface'. Similarly the individual or particular has not the universal *in* it and something *also* beside the universal to make it particular. As the whole nature of the species is covered by the genus-universal, so the whole nature of the particular is covered by the universal. In this particular colour there is nothing but colour. in this particular number there is nothing but number. The expression 'particularization of the universal' has been used instead of particular, or particulars, in order to emphasize the fact that the nature of the individual is nothing but what belongs to the universal itself. Particularization is of it and in it as much as differentiation. The universal 'conception', we can now say, is nothing but the apprehension of the universal, that is of the universal as objective reality For want of understanding this there has arisen a confused theory of some special mental something called the universal conception, or the universal 'concept', which is not a mental image (=imagined individual). This is a mere fiction; there is no such mental entity. Just as the universal cannot be, except as particularized, so we cannot apprehend it except in the apprehension of a particular, either experienced or remembered.[1]

§ 145. In a universal statement the universal is obviously apprehended and is referred to in the verbal expression; but the same is true, in an important sense, of the singular statement. Aristotle affirmed that even perception is of the universal, in the sense that we perceive an individual never as merely individual but as individual with a quality, implying that such a quality is somehow universal, so that with him the formula of a singular statement of perception would be 'this is so and so'. He

[1] This is the apprehension of memory, for in memory, even when of a particular *as such*, we apprehend a previously experienced reality by the help of memory-images, for memory is not merely having a memory-image (see §§ 137–8).

merely asserts this truth without any proof, thinking doubtless that it could be justified by verification in the case of any singular proposition.[1] As the particular then is inseparable from the universal, so our apprehension of it, as expressed in the singular statement of experience, involves the apprehension in some way of the universal. The apprehension of any particular as definite necessitates, as we saw, its distinction from other particulars within the sphere of some kind of being which is common to them and so universal. Thus we may distinguish individual red, blue, or green colours. But further: we cannot apprehend the definite quality of anything (say redness) without apprehending what we should be prepared to recognize again as the same in a different case, in other words a universal. This would be quite impossible if we had apprehended something merely particular and entirely confined to the particular instance. Even if we have had but one experience of a given quality, when we recall it in memory we can think of other instances of it as being possible. This, put merely in the strict form of entertaining the question whether there could be other instances of it, would be impossible unless we apprehended it as more than merely individual. The same thing follows from our power of *imagining* different instances of it.

§ 146. Thought is often said to be the faculty through which we apprehend universals, as distinguished from perception, the faculty of apprehending individuals. This distinction causes difficulty when it is recognized that perception somehow involves a universal. Thought is a term applied widely to any activity of the mind concerned with apprehension, which is not experience or perception, and so may include even memory and imagination. It may on the other hand be restricted to reasoning and the apprehension of universals, together with the questioning state of consciousness.[2] There is a danger of overstatement in two contrary ways. If, distinguishing thought from perception, we make the universal the object of thought alone, perception appears as if it were of the mere particular without any universal. If, on the other hand, recognizing that the universal is somehow apprehended in perception, we still make the universal the object of thought alone, there is danger either of confusing the distinc-

[1] Pp 45, note a, and 355, note 1.

[2] Part I, ch. 2.

tion of thought and perception, a distinction which we feel must somehow be maintained; or else of putting thought side by side with perception in the act of perception, without any real unity between them, so that perception still remains distinguished as being in no sense apprehension of the universal. The subject is difficult, but the difficulty does not concern the distinction of universal and particular, it concerns the nature of our apprehension of this distinction. The total being of the universal is not its unity and identity in particulars, but the whole of the particulars as the particularization of this unity. When thought is said to be the faculty of apprehending universals, the universal is meant as a unity in distinction from the plurality of its particulars. Now the being of the universal extends beyond the being it has in the particulars perceived in experience, and it is this fact which is at the bottom of the distinction of thought, as of the universal beyond the particulars, from perception, as of the particular; whether this distinction is rightly conceived or not is another matter It is felt of course that thought as of such a universal takes us beyond the present perception.

Consider the apprehension of the particular in perception. Though the particular is not the whole being of the universal, yet if we apprehend it *as* a particular *of* a universal it seems necessarily to follow that we are in some sense apprehending the universal; that is to say, we cannot apprehend the narrower being in the particular *as narrower* without being somehow aware of, in other words apprehending, the wider being. Now it may be said that there is an important sense in which we are not apprehending the wider being, because it may be that we are not apprehending any of the other particulars in which that wider being consists. It may also be said that we do not apprehend, in the apprehension of the particular, the fact of the being of the universal in other particulars; its being in the other particulars is not *in* this particular. (Otherwise this particular itself would be in all the other particulars.) We may help ourselves by a simple analogy: we perceive a particular surface, for instance we see it; but we do not perceive (see) the volume within or behind it. Nevertheless we cannot apprehend the surface as surface except as the surface *of* a volume; thus we do apprehend that the volume is there and has an existence

which we are not perceiving. In this sense we do apprehend the volume. Now similarly when we perceive the particular (apprehend it in experience), we can apprehend that it belongs to a universal of a wider nature without any further apprehension of that nature, except as something that is here particularized and can be particularized elsewhere; in short, as something which has a nature beyond what we are perceiving. That is what we do when we apprehend the particular as particular. Now such an apprehension is an apprehension of the universal. If we consider those apprehensions which are called 'judgements' of perception and are expressed in language ('that stone is blue', 'that silver object is a pencil case'), it is not difficult to see that here we do apprehend the universal in the way just described On the other hand, in what is called abstract thinking (excluding symbolic thinking for the present), though we appear to have our attention merely directed to the unity and identity of the universal as against the particulars, we can only do this in the apprehension of particulars (experience or memory). Moreover, if we merely think of the universal as something common to these and to other particulars not perceived (which corresponds perhaps fairly to the phrase 'mere abstraction'), such apprehension of it is actually not of anything more of it than we have already apprehended in the perceptions. This 'thought' therefore is not only impossible without perception, but has no more 'content' than we find in the perception; the difference lies in our attention to this side of the universal and our interest in it, as the object, for instance, of some inquiry to be undertaken.

There is however another case in which there is a greater difference. If we are able to apprehend, besides the nature of the particular instance and also the fact that it is a particular of the universal, something more which belongs to the universal however particularized; for instance, if we see not only that this triangle is a particular of triangularity and that its exterior angle is greater than either of the interior opposite angles, but that this property must be so in any other particular triangle; then this 'thought' is of something beyond the particular experience, and in practice we unhesitatingly call that 'thinking'. Yet the result of this apparent passing beyond the particular

experienced has been to exaggerate this distinction and to lead to quite false theories of such an investigation as the above. The result has been to reason as though mere thinking effected the distinction, and as though thinking could be conducted without the apprehension of particulars and did not depend on it. Now even this thinking, as we shall see hereafter, is quite impossible without the apprehension of the particular and we shall find that this is really the secret of demonstration.

§ 147. Consider now the beginnings of apprehension, which differ from these 'judgements' expressed in language. Language is universal, 'established names', as Aristotle says,[a] are 'general', and to apply a term to anything implies that something of the same sort has been recognized already, and so the thing is conceived as the particular of a universal But in the beginnings of apprehension we are noticing things we haven't noticed before and thus these beginnings are necessarily without language. We have here not to try to explain how we begin to notice or apprehend anything, but to determine what the act of apprehending anything must involve to be an act of apprehension at all. It will accord with the use of language to employ the word 'notice' for the most primitive form of apprehension (babies are said to be 'beginning to notice'), meaning by this the apprehension not of mere difference between the object noticed and others, but of just enough of its positive quality and of theirs to make the perception of difference possible. Noticing, however elementary, necessitates distinction of what is noticed from something else, which is therefore also so far noticed.[1] Now, if we notice a particular A_1, we cannot apprehend it as a mere individual, but as having some distinctive quality A, this quality being individualized in A_1 To notice the quality as distinct we must distinguish it from some other quality; thus we need to notice at least two individuals, A_1 and B_1, where A and B are distinct. We are *ex hypothesi* concerned with the case where A and B are noticed or apprehended for the first time. If A_1 is a particular colour, B_1 is not necessarily another

[1] Cf. Aristotle, *An. Po.* ii. 19 (passim), esp. *στάντος γὰρ τῶν ἀδιαφόρων ἑνός, πρῶτον μὲν ἐν τῇ ψυχῇ καθόλου. . . πάλιν ἐν τούτοις ἵσταται ἕως ἂν τὰ ἀμερῆ στῇ καὶ τὰ καθόλου*, 100ᵃ 15.

[ᵃ *τὰ κείμενα κοινὰ πᾶσιν*, *Metaph* 1040ᵃ 11 (viz. are common to each of a number of individuals).]

colour; B_1 might be for instance a sound. Such distinction classifies the distinguished and involves the apprehension of a universal, as the being common to them, even if only the universal of something-in-general. Each as distinguished is apprehended as *a* being.[a] Now this is not the universal of the quality Aness in A_1, not for instance of redness in the colour noticed, the universal, that is, which Aristotle has in mind when he says 'perception is of the universal'. He refers to the quality which makes the individual 'so and so', and that is not mere being We recognize difference and identity of being in A_1 and B_1, because we apprehend in them two different forms of being. But, in thus noticing A in A_1 for the first time, we have *ex hypothesi* not more than one instance of A before us in apprehension. What we are apprehending as A is indeed a universal quality in a particular and so far Aristotle is right, but it does not follow that we apprehend it as such, that we have, in his terminology, 'perception of the universal *qua* universal'.

Observe that a universal is not merely identical in its particulars but is *something definite* identical in its particulars; and this implies the distinction of the something definite from its being identical in the particulars, and it is this something definite which distinguishes it from other universals What this something definite is can only be understood in examples, for instance red in the particulars or individuals of redness (which by the way are not red things, but individual red colours), animalness in the particular animals. We see in the examples that this something definite is not the same as universality or particularity. When regarded as particularized in the individuals this something definite is often called their *quality* (their distinctive quality), plant, for instance, and animal, in this plant and this animal. They are not mere individuals but we may say they are distinguished by their quality as plant or animal In ordinary language this something definite is represented by the mere adjective, as red or animal, opposed to redness or animalness on the one hand and on the other to this red colour or *a* red colour and so on. In our symbolism, it is A as opposed

[a Cf. 'illud quod primo cadit in apprehensione est ens, cuius intellectus includitur in omnibus quaecunque quis apprehendit'. St. Thomas Aq., *Summa Th* 1-2, xciv ad secundum.]

to Aness and to A_1. Now though in the case of a given universal there is a word corresponding to this something definite (as the adjective red), there is no general term for it for all universals, that is, there is no technical term. We must remember too that universal itself, as we employ it in philosophy, is really a technical term and does not belong to ordinary language. As a term for the something definite, 'quality of the universal' suggests itself, since this, as in individuals, is their quality, and distinguishes individuals of one class from those of another. But such a use of quality would only be analogical; strictly quality implies reference to the individual Perhaps we may say simply 'characteristic being of the universal', with the express understanding that it is a technical term, only to be understood by realizing what corresponds to it in the examples given. Similarly we can give no account of number in general, except through the instances of it in which we realize what it is: and so also of space and time.[1]

In the case before us, we have apprehended A_1 and B_1 as particulars of a universal, but not as respectively particulars of Aness and Bness. We cannot say that because we have apprehended A_1, so far, as a particular, we have therefore apprehended it as a particular of Aness (which of course would involve the apprehension of Aness as a universal). The truth seems to be that while A and B, or more accurately the apprehension of the difference of A and B (when they thus appear as different qualities in A_1 and B_1), have indeed enabled us to distinguish A_1 and B_1 as particular beings and so to recognize for instance the particularity of A_1, we have not so far made any distinction between A and the particularity of A_1. Thus we should apprehend A (the 'characteristic being' of the universal in question) in its difference from B, but not apprehend it as having an

[1] Perhaps 'intrinsic being' would suggest more readily what is meant, but there is danger lest some more mysterious meaning should be assigned to intrinsic. The absence of a general term from ordinary language and the necessity of inventing a technical expression is in itself no difficulty Not only is universal a technical term but so is quality, it is not a necessity for ordinary speech It is significant that adjectives like red get to be used as substantives The painter says he puts red into his picture; the mathematician studies the circle not circularity, in ordinary language, and yet he doesn't mean the individual circles On the other hand, the adjective hot is not used for heat.

existence beyond A_1, that is not as a universal in particulars; nor, though we apprehend A_1 as a particular, should we apprehend A_1 as a particularization of A. In short, what we apprehend *is* a particularized universal of 'characteristic being' A, but what we apprehend in it *is* this 'characteristic being', neither as universal nor as particularized It is this indeed which is what Aristotle calls 'first or primary in the soul',[1] but it is not there *as* universal. Nevertheless it *is* a universal; it is something identical in particulars and that it is which makes it possible to identify it in another instance. When we have done this we have recognized the universal *as* a universal. As already maintained,[2] if we had apprehended A, in the particular form A_1, merely as confined to the particular, it would be quite impossible that we should recognize A as in another particular (which is what we actually do), just as it is impossible in the case of two individual books before me to recognize or identify the one individual book as in the other.

Now, if this analysis is correct, even in our developed consciousness and when we possess language, it would seem quite possible to be sometimes apprehending the characteristic being of a universal without our consciousness being fully awake, so that we could not be said to be apprehending either its universality or its being particularized. Thus I may be enjoying a beautiful colour, without reflecting at all whether I have seen it before or not, and indeed I may not even be thinking of any being of it beyond the time of perception at which I am perceiving it; I may not even be reflecting about it as in an individual time of perception. If this is so, the existence of this fact of our consciousness, the nature of which is not clearly apprehended, is probably what inclines us to think of perception as of the mere individual (because here at least there would be no consciousness of the universal) and causes us, even when we realize that the universal is somehow apprehended in perception, to have a misgiving still and to think that this perhaps does not belong to the actual perception as such, but only to an after-reflection upon it. Now in this what we are really doing is to confuse the definiteness of the being of the universal, its charac-

[1] *πρῶτον ἐν τῇ ψυχῇ*, p 340, note 1.
[2] § 145.

teristic being (A), with individuality or particularity. Finally, if this is a true presentation of the facts, it shows us not only how important it is to attend to the scruples of the ordinary consciousness but also that those who hold that perception is always of a universal and those who hold that as perception it is of the mere particular, are both in error; the former because not everything we apprehend in perception, though it is a particular of a universal, is apprehended either *as* particular or *as* universal, and the latter because nothing is apprehended as mere particular.

§ 148.[a] In the present section I wish to strike at the root of all the fallacies about Universals. I shall attempt this by a more precise consideration of the real meaning of the unity of the universal, of what is meant by speaking of it as something common to particulars and identical in them. In our ordinary life and in scientific thinking, the facts which, owing to their apparent difficulty, have been seriously disputed and very frequently denied altogether by philosophers are always, though generally unconsciously, assumed without any hesitancy whatever to be real. We always, in the ordinary, treat the universal as something quite objective, as an absolute unity. Thus there is one and only one universal of 'circularity' and we only consider one in mathematics Such universals are moreover treated as something entirely objective. The universal is no mere thought of ours but a real unity in objects, and further something identical in the particulars, which identity cannot be done away by substituting the term *similar* for *same*. No difficulty whatever is made about the identity of the universal in particulars, on the contrary, this is always treated, though of course not explicitly and philosophically, as a quite obvious fact. In short the unity, reality, and identity of the universal in the particulars is presupposed in every sentence that we utter.

It is indeed astonishing that in our philosophic criticism we should overlook so startling a fact But yet it is and has been

[a § 148 was, like the two succeeding sections, a separate paper left by Wilson in typescript His view of the universal seems to have been suggested by Green, from whom also much of his criticism of Aristotle and the syllogism appears to have started (see Green, *Works*, III, p. 56)]

universally overlooked. Plato indeed realized a very essential side of it, namely that thought and language would be quite impossible without assuming this unity, identity, and reality of the 'Idea'. Yet even he hardly realized the great point that the matter is without any suspicion of difficulty, in all our ordinary life and conversation. This stands in strange contrast to the hopeless puzzle which metaphysics has made of the subject. Moreover, any theory of the objective existence of universals is at the present day very commonly, indeed nearly always, looked upon as the quite peculiar product of a very subtle metaphysic, while the mere and sheer truth is that the reality of the universal is the unconscious assumption both of all our ordinary speech and thinking and of scientific thinking also. What I have therefore come to feel is that the solution of this celebrated problem ought to be specially easy instead of specially difficult, if we only go about it the right way; that our difficulties are entirely of our own making The distinction of universal and particular is indeed absolutely necessary for the explanation of anything whatever. Any explanation of anything presupposes this distinction. If then the distinction is not explicable (in the sense, that is, of an explicable puzzle) since it is itself the key and presupposition of all explanation, every explanation would fail with the failure of this key. Once more then the conviction is borne in upon me that the puzzle is somehow wholly artificial and that we may have the courage to believe we can entirely solve it.

Since the ordinary language is quite clear and is always understood, the clue lies probably in the translation of all the philosophical technicalities into the normal and ordinary language about the matter to which they relate. Consider the simple example of triangle and triangularity. We say that this triangle is a particular of triangularity, that it has the quality of triangularity and that the triangularity is common to all triangles. Now what does the abstract noun triangularity mean; or, at all events, what does the ordinary language, which corresponds to it and into which it would have to be interpreted, mean? If we ask what triangularity is, the answer would probably be that it is having three sides. It refers in any case to the particular sides of a particular figure, for it is only

particular sides which can be three in number, and these must belong to a particular figure. Thus then, more accurately, 'triangularity' means 'having three particular sides'. Now, since only particular figures can have three particular sides, the still more accurate interpretation of the formula would be 'a particular figure's having three particular sides'. If we think of a particular triangle A, the triangularity of A is 'its having its particular sides three in number'. This property it obviously has to itself. It is not something common to it and another triangle; if we tried to make it so, we should be identifying the sides of one particular triangle with those of another. We clearly must have something more general than 'triangularity' in the sense of 'triangularity of this figure'. But now triangularity as such can only be triangularity of particular figures, for 'figure in general' has no sides at all. We have to find the more general acceptance of triangularity, though it cannot possibly fail to refer to particular figures and particular lines. All then that remains is to distinguish triangularity in particular from triangularity in general by making the one 'the three-sidedness of *this* particular triangle', and the other 'the three-sidedness of *any* particular triangle'.

Let us now substitute this meaning of 'triangularity in general' for triangularity in general in the sentences which express our puzzle or difficulty about it. In making the substitution we must be as accurate as in a mathematical formula and must not alter any part of the linguistic expression. Consider now the common assertion that the universal, which is the name given to triangularity, is that which the particular triangles have in common This will now have to become 'the three-sidedness of *any* particular triangle is that which is common to all the particular triangles'. This is clearly nonsense. We seem to arrive therefore at a very striking result, namely that 'triangularity' does not mean what is common to all particular triangles.

If this is true, the consequences are momentous, and we must for safety inquire how that which is common to the particular triangles is really to be expressed in language. The ordinary language feels no difficulty and it would be replied without any misgiving that what is 'common' to the particular triangles is 'that each of them has three sides'. Another answer might be

that what is common to particular triangles is the number of their sides, three, the *same* for all. Consider the first expression, that each of them has three sides. If 'common' be taken in its ordinary and literal acceptance, it would mean something which was in the nature of each particular But now this could not be that each of them has three sides, for the resulting sentence is again nonsense. The fact is that in such a sentence the word 'common' has not its literal signification. What it does mean is determined by the words associated with it. Having something in common in this case is each of the particular triangles having the same number of sides. This is what common really means, and it is the confusion of this true meaning, perfectly intelligible in itself, with the more literal meaning which is largely responsible for the philosopher's difficulty. Consider now the second expression, that what is common to all the triangles is the number of their sides, three, which is the same for all. Observe here how the word 'same' is absolutely necessary, and that 'similar' would be quite wrong. As we before inquired what was the real meaning of 'common', so we now have to ask how the word 'same' is used in this special context. The answer again is quite clear. What is the 'same' is the number 3, that is to say again 3-ness, of which the number of the sides in each case is a particular So that it is this absolutely well understood distinction of universal and particular which explains the meaning of the words 'common' and 'same', instead of these latter words being any explanation of the distinction of universal and particular. Now substitute for 'what is common to the particular triangles' the expression we have just found 'the universal of which the triangles are particulars'; we then get 'triangularity is the universal of which the triangles are particulars'. This at first looks correct enough, but, if we substitute as before for 'triangularity', we get 'any figure's having three sides is the universal of which the triangles are particulars'. This is again nonsense We thus seem conducted again, strange as it may appear, to the conclusion that we cannot correctly say 'triangularity' is a universal. Yet, after all, this is the conclusion which will be indicated hereafter, when we shall show that if we say 'triangularity is a universal', we get not only into the folly of the 'member of itself', but

also into absolute contradiction in terms. The statement that 'triangularity is a universal' is thus seen to be a linguistic impossibility, which is disguised by the grammatical form of the abstract noun which is supposed to represent the universal.

If this reasoning is correct, we have arrived at a decisive settlement of the puzzles about the universal, whether the ancient and rational ones, which are still unsettled in serious modern metaphysic, or the puerilities of certain paradoxical recent authors. Moreover, our foreboding that the true solution must be something simple turns out to have been fully justified. It will be easy to show how many very silly verbal fallacies are all of them easily and decisively met from the position we have arrived at. This proof that we cannot say 'Aness is a universal' is indeed analogous to the proof which will be given that universals cannot be counted. In each case the proposition arrived at destroys the whole mass of fallacy corresponding to it, namely the logical and metaphysical absurdities of things represented as members of themselves and the fantastic mathematical nonsense which has in recent years been developed about number. It will be found for instance that such difficulties as arise from treating 'particularity' as a universal disappear at once, as well as the nonsense about the wonderful 'class of classes'. I have not allowed myself, in this inquiry, to be diverted from the facts by theoretical difficulties made about them. I have simply concentrated attention on the reality of the facts about the objectivity, unity, and identity of the universal and shown that whether difficult to understand or not, they must be fully and frankly recognized This is so far in the spirit of Plato in his *Parmenides* Further, I seem to have discovered that the true source of our metaphysical difficulties lies in the attempt, a mistaken attempt too frequent in philosophy, to explain the nature of the universal in terms of something other than itself. In fact the relation of the universal to the particular is something *sui generis*, presupposed in any explanation of anything. The nature of the universal therefore necessarily and perpetually eludes any attempt to explain itself. The recognition of this enables one to elucidate the whole puzzle of the *Parmenides* of Plato.

§ 149. The ordinary forms of language before the appearance

of reflective and abstracting thought were intended to express the nature of particulars and are still in everyday life employed for this purpose. Thus the nominative case to the verb was originally (and very commonly still is) a word designating an individual substance.[1] A misunderstanding of the original meaning of grammatical forms has produced the fantastic puzzles, as one may be allowed to call them, which, mistaken for metaphysics, are fallacious thinking, mere verbal fallacies. The ground of the mistake lies in applying to the abstract universal, forms which are proper to the particular, as I shall now endeavour to illustrate by examples. In the normal form of speech, where the subject is an individual substance, we have such expressions as ' this is a hyacinth ' (this is an A), or ' this flower is a hyacinth ', the general formula for which is X_1 is an A, where the nominative is equivalent to A_1, that is to a particular A. Now in this sentence what the nominative case stands for is a particular in the strict sense of the word, and a particular substance It is a particular of the universal represented by ' Aness '. Aness is not a mere universal, it has a special quality or character corresponding to the symbol A. The particular subject, corresponding to the nominative case to the verb, is said to have the quality Aness. In this form of sentence, with the indefinite article following the verb, the quality or character covers the whole nature of the substance A_1; that is to say there is nothing in its nature which is not comprised in its having the quality Aness[2] Observe that this relation *must* obtain between an individual and a universal, if the individual is a true particular of the given universal. For instance ' this flower ' is a true particular of ' hyacinthness ', whereas, in the sentence ' this flower is blue ', ' this flower ' is not a particular of ' blueness ', since blueness does not cover its whole nature: the true particular of blueness is the *colour* of the flower, not the flower itself.

Suppose now that in the above form of sentence we substitute an abstract noun for the name of the particular substance (the nominative case to the verb) so that the sentence is of the form ' U_1 is an X ', can we assume the same relation as before between the nominative case, the universal in question (U_1), and a uni-

[1] Part II, ch. 8 and § 79 [2] p 187.

versal corresponding to the attributive (say Xness)? Consider a particular example. 'Circularity', as common to all circles, is their true universal. Now take the form 'circularity is a universal'. Can we say, on the analogy of the sentence in which the nominative case is a particular substance, that corresponding to 'a universal' in the attributive part of the sentence there is a universal to be called 'universalness', and that the nominative case, which here denotes a universal, is a particular, or a particularization of 'universalness'?

In the fallacious thinking referred to, the sentence in which the nominative case is a universal is treated as if it were in all respects like that in which the nominative case is an individual substance. There is no consciousness that any distinction has to be made and no critical examination (such as is absolutely necessary) of the meaning of the grammatical forms. The consequence is to make one universal, e.g. 'circularity', a particularization of another universal namely 'universalness'; that is, one universal is made to be a particular of another; and indeed this other, universalness, would have to be such a universal that its particulars could only be universals In the ordinary and correct use of universal, different universals may indeed have a universal common to them, but they are never particulars of this common universal, only differentiations of it. For instance 'conic section' is common to 'circle' and 'parabola', but the latter are its differentiations and not its particulars. Thus this new use of particularization of a universal ought, *prima facie*, to excite our suspicion.

Now observe what happens 'Universalness' is made a universal. But, by hypothesis, 'universalness' is the universal of which all universals are particulars Thus 'universalness' as a universal must be a particular of 'universalness', that is a particular of itself. This is obviously absurd, and the proper inference from it is that the treatment of the form of statement with the universal for its nominative must be a fallacy. The next step then ought to be to try to prove otherwise that it is a fallacy, and to discover the ground of the mistake. But instead there are modern writers foolish enough to take this obvious contradiction for a piece of subtle metaphysic.

The contradiction arrived at is really decisive and quite

enough to prove the fallacy of the whole procedure: but we shall now endeavour to show otherwise that it is a fallacy, and upon grounds which even these writers themselves cannot but admit, that is by proving that it involves a contradiction in terms.

In the normal form of sentence now in question, 'This (i e. A_1) is an A' or 'X_1 (i e. A_1) is A', that which is designated by the nominative case possesses the quality of Aness and its whole nature is comprised in Aness. It is said, in ordinary phrase, to be an instance of Aness. If then 'U_1 is a universal' is treated in the same way, e g 'circularity is a universal', the whole nature of circularity has to be comprised in universalness, that is we should have to say that its nature has the quality of universalness. This being so, consider what happens in the case of 'this figure is a circle' 'This figure' must have circularity as its quality and must be an instance of circularity. But, by hypothesis, universality belongs to the nature of circularity, for indeed all the nature of circularity has to be comprised in 'universalness'. Thus if this figure, that is this circle, has the quality of circularity, it has to have the quality of universalness and to be an instance of universalness. That is to say 'this circle' must be a universal, a sufficiently absurd contradiction of course.

This shows that a sentence in which an abstract noun is the nominative cannot be treated like the normal sentence of which the nominative case is a particular substance, and explains the origin of the fallacy which we are discussing. It turns out that universalness is not a true universal, and this is not surprising, for a universal must have some definite quality, what I have called [1] the 'intrinsic character' of the universal Universalness has no such quality or intrinsic characteristic and so cannot be a universal.

The fallacy then of treating universality as itself a universal is the consequence of treating the universal as if it were a particular. Every universal then is treated as a particular of universality, not as a species or differentia of a universal but only as a particular of it. This involves the hypothetical existence of a universal, i.e. universality, which is such that the

[1] See p 342, foot-note 1.

only particulars of it are universals and of true particulars (or individuals) it has none at all.

§ 150. Difficulties have arisen in the singular development of modern mathematical speculation about the nature of number which appear to be due to a misunderstanding of the true function of universals. The result has been the development of a system of new conceptions of number which is a mere fantastic chimera.

Consider what a mathematician would call 'the series of natural numbers' 1, 2, 3, 4, 5; what are really *the* numbers, for there are none others, notwithstanding the fictions of the theories just referred to. These numbers are properly speaking the 'universals of number'; for instance 3 stands for 3-ness, as seen in any particular group of 3. Further, as universals they cannot be added to one another, and this is probably the meaning of Plato's unaddible numbers.[a] Moreover, they are not only not addible (2-ness plus 3-ness is not equal to 5-ness) but they cannot be counted, that is to say we cannot count the universals of number in the above series and say there are five of them, if we stop at the universal 5.

Some mathematicians, and probably most people who think unguardedly, treat these universals of number just as if they were particulars. This indeed is the general form of most of the fallacies which belong to the kind of pseudo-speculation we are discussing, the treatment, that is, of universals exactly as if they were particulars. Let us then see what happens if we attempt to count them. 1, 2, 3, 4, 5, we should say is a group of five universals, as such it is a particular of 5-ness. But the number 5 in the series is itself 5-ness, thus 5-ness together with the preceding universals of number is a particular instance of 5-ness, and so a particular instance of itself This is obviously absurd. Lest it should be taken for metaphysics, as it probably would be by those who mistake paradox for philosophy, we must try to show otherwise that it is a fallacy by a *reductio ad absurdum* in the first instance, and afterwards by explaining the impossibility of counting the universals of number from the nature of universality itself.

[a See *Classical Review*, June 1904, vol. xviii, No. 4, pp. 247–60, where these points are developed]

If the universals of number can be counted, they must have something in common in virtue of which they are particulars of the same universal. Now here, in the nature of the case, this universal must be 'universal-of-numberness'. Consequently since each particular of Aness has the quality Aness, the universal of number must have the quality of 'universal-of-numberness'. This being so, the particulars of this last number-universal must have this quality of 'universal of numberness' Thus they must be themselves universals Take an instance. A particular group of 5 as being a particular of 5-ness, which is itself a particular of 'universal of numberness', must itself be a universal, namely a universal of numberness. This is of course a flat contradiction: a particular set of 5 cannot be a universal.

We must now have a direct argument based on the nature of the universal. In order that units should be capable of being counted they must not only be of the same sort but they must be mutually exclusive. But now are the universals of number mutually exclusive? Consider 5-ness. Every instance of 5-ness is the sum of a particular 2 and a particular 3, i.e. every particular of 5-ness is the sum of a particular of 2-ness and a particular of 3-ness. Evidently then the nature of 5-ness is inseparable from the nature of 2-ness and the nature of 3-ness. It is impossible therefore to say that, for example, 5-ness and 3-ness are mutually exclusive. If we are now asked how the nature of 5-ness, if not excluding the nature of 3-ness, does involve this latter nature, or what it has in common with this latter nature, our answer must be simply the fact above stated that every particular of 5-ness involves a particular of 3-ness.

The universals of number then cannot be counted, for they fail to satisfy the conditions of countableness. The form of counting is quite inapplicable to them. Thus, when we see what counting means, we see that it cannot apply to the universals of number. we might as well try to persuade them as to count them. The form of persuasion cannot apply to such objects as the universals of number and so they cannot be persuaded.

XVI [a]

CLASSIFICATION

§ 151. THE recognition of the universal has given rise to important questions which concern metaphysic and psychology as well as logic The contrast between the universal and the particular presents certain difficulties to thought. Real existence seems all particular, although the universal is necessary even to a single statement or apprehension Hence there is a tendency to represent the universal as a subjective product, as a mere idea. This leads to a further difficulty because it is found that the universal as such cannot be presented to imagination any more than to perception. Thus originated the well-known controversy between conceptualism, realism, and nominalism, a subject which belongs to metaphysics and psychology rather than to logic To this, though properly metaphysical, we shall return, at present we shall concern ourselves only with classification and the cognate subject definition, recognized parts of the traditional logic.

§ 152. Classification is an activity of the human mind in knowing objects; an activity which logic does not create but can only reflect upon. Formal logic has in this branch of the study made the same mistake as in the case of the syllogism; it has tried to guide the mind by warning it against fallacies which it could not possibly commit. Thus it has enunciated the grave *dictum* that in dividing a class we must not pass from one *fundamentum divisionis* to another, but must divide by one such principle only. The reflective consciousness which is logic assimilates itself in fact too closely to the scientific consciousness which is not reflective but directs itself to objects. As that consciousness lays down rules, so logic tends mistakenly to

[a See notes on the sources 'This requires to be entirely rewritten and the word *concept* everywhere taken out' *MS note* He had intended to embody also §§ 460–76 in the course The foot-note references are mostly supplied conjecturally]

regard itself as testing the value of the rules which it examines and even as producing correctness in them. Now what it is examining are just the rules of thinking, rules therefore that cannot be broken. Thought cannot justify its own rules or even criticize them.

§ 153. The study of classification comes quite at the beginnings of logic, implicitly in Plato,[a] explicitly in Aristotle.[b] This is natural; for the most elementary act of knowledge must involve classification, and reflection upon that knowledge is logic Our knowledge begins, doubtless, by attention to particulars in experience and is stimulated by practical needs, not originally by a desire for knowledge for its own sake. Mankind, faced by practical needs, seeks practical rules so as to know how to deal with nature; frames principles to go by in action. Such a rule or principle is a universal We seek something which we can count on at all times and in all the variety of the different cases, and this is a unity by contrast with such variety. Even if the knowledge be of a particular object, what is sought is knowledge of the behaviour of that object not at one time only but at all times, and so is universal as compared with the different times in which the behaviour is manifested The interest of knowledge, whether theoretical or practical, will go further and ask for a reason, and a reason or an explanation is, in the nature of the case, universal. Indeed even the attempt to represent ourselves as knowing one individual by itself inevitably involves the universal. To know an object as something definite, it must be distinguished from other objects and is thus necessarily related to them, must have something in common with them. To distinguish is also to unify. The characteristics we assign to the individual have also a universal character as we recognize something in it which might be applicable to other individuals.[1]

[1] Cf §§ 141 and 145 on thought as always universalizing its object, and Aristotle's generalization of the fact of perception, *εἰ γὰρ καὶ ἔστιν ἡ αἴσθησις τοῦ τοιοῦδε καὶ μὴ τοῦδέ τινος*, even if sense perception is of the 'so and so' and not of some particular 'this' *An Po* 87^{b} 28, *cf* 100^{a} 16

[[a] Especially in the *Phaedrus*, *Philebus*, *Sophist*, and *Politicus* Definition is considered explicitly in the *Meno*

[b] e g. *Topics*, vi. 6; *De Part An.* i 2–4, *Metaph* Z, 12. Dichotomy is examined in *An. Po.* ii. 13 and *De Part. An.* i 2 and 3]

§ 154. This rudimentary classification involves a recognition of different common elements, a variety of universals. Naturally the same process of unification is adopted with these and a community in them recognized. To such a new community, not of individuals but of universal elements, logic has given the technical name of *genus*, calling the more particularized universals, *species*. But such a genus, when other genera have been formed with which it has community, becomes itself a species as opposed to a class which includes it. Thus we get the familiar distinction of genus and species, and, for the manner in which a species differs from its genus and from other coordinate species in that genus, the technical term *differentia*.

The question then arises how far the process can be carried in both directions. The descent to lower and lower species terminates in *infimae species*, the ascent terminates in what are called *summa genera*. Further, the fact that a given genus includes a plurality of species suggests an inquiry as to the complete division of a genus, and thus arises the logical theory of Division. The question is also suggested whether the *summa genera* can be exhaustively determined; this is the philosophical investigation of the Categories.

§ 155. A very common view of the relation of genus and species seems to be fairly represented as follows. If two or more individuals in which a complex of elements is distinguished have a common element, the notion of that element is called a species or class notion and the individuals are said to form a class or species, as unified by the common element. If the common element is itself complex and, when compared with similar complexes, is found to have some element in common with them, this new common element is called a generic notion, and the species unified by it constitute together a genus, the differentia in the case of each species consisting in the elements which it has besides the common or generic element.

Thus, if the species notions be AB and AC, A will be a genus, B the differentia of the first species, AB, and C of the second, AC. Again, a group of elements contained in the notion of any universal is called the intension of the notion; the aggregate of individuals to which the universal belongs is called the extension of the notion. From the point of view of the intension,

the genus or rather the intension of the genus, appears to be a part of the intension of the species. From the point of view of extension, the aggregate of individuals corresponding to the species is a part of the aggregate of individuals corresponding to the genus, and thus the extension of the species is said to be a part of the extension of the genus. Genus then in relation to species is either a whole or a part according as we look at the extension or the intension. A consequence of this is the familiar doctrine that the extension of a term varies inversely as the intension.

§ 156. But this very representation of the meaning of genus and differentia makes these terms relative. There would not necessarily be a fixed element in the species which makes the genus, but one element or another would be genus or differentia indifferently. Which was which would simply be determined by the species with which we compared the given one; e.g. in the species AB, A would be the generic element if we compared AB with AC, but B if we compared AB with DB. This mode of representation has the further tendency to make us suppose that the elements of the species are a mere aggregate with no order or precedence. Thus the notion A would appear to be differentiated into the species AB by the addition to it of the element B, when we are considering AB and AC; while B appears to be differentiated by the addition of the element A, when we compare the species AB, DB. This same sort of indifference of the elements to each other affects also the division of the class. As we shall see presently, the division of the class is effected by the differentiation of the elements of the class notion. Supposing then that, in the class notion AB, the differentiated species of A are A_1, A_2, A_3, and of B, B_1, B_2, B_3; as A seems indifferently combined with B, so also it might seem that we arrive at the determination of the species of AB by any arbitrary combination of a differentiated element of A and a differentiated element of B. We shall endeavour to show that this is an adequate account neither of classification nor of the relation of genus to species. Instances of terms which might seem to correspond to this view of classification might certainly be found, for example a golden sphere. Here the elements golden and spherical seem indifferent to each other, and which is taken

for genus and which for differentia appears immaterial. Even here, however, we notice that it is not natural to represent golden sphere as a species either of spherical object or of golden object. We do not, in ordinary language, call it a *kind* of the one or of the other.

§ 157. However that may be, there is another class of universals which present a great contrast to this one. In golden sphere we may ignore the sphericality and abstract the quality of the material, or conversely. But now take, for instance, redness and blueness, which we naturally call species of colour. If we eliminate all that is meant by colour, nothing whatever is left, or, if we suppose some differentiating element left, it would have to be something different from colour. Thus the difference between red and blue would not be one of colour, whereas it is colour in which they agree and colour in which they differ. We cannot give verbal expression to the differentia which constitutes the species, except by using the species name itself, red or blue. Consider next an expression where we have a name for the differentia. Compare, for instance, (plane) rectilinear figure with figure on the one hand and triangle on the other. Here the genus is figure and the differentia rectilinear is now distinguishable in thought and represented by a word in a manner not possible for red and blue. But as blue stands for blue colour the divergence is only apparent; for here also, if we abstract figure from rectilinear figure, we either leave nothing, since the whole being of rectilinear figure is comprised in figure, or, if you say we leave rectilinear, this is unintelligible save as a determination of figure. Plane figure necessarily implies boundary and this again necessarily implies that the boundary is of straight or curved lines. Thus we cannot eliminate rectilinear as a separate universal It has no existence even for our abstracting thought apart from figure. Again, take the most general notion in this department, namely, space. The sphere is not a determination of the general notion of space by something else not space which makes it a sphere and not space in general. On the contrary space cannot be differentiated by anything else than what is spatial. Space is not a genus forming part of the being of the whole sphere: on the contrary the whole being of the sphere is spatial. Again, odd and even

numbers are said to be species of number, but we cannot eliminate number from them and leave something non-numerical; for odd is intelligible only as meaning odd number. The characteristic of all these instances is, first, that they do not allow the differentia to be treated as something different from the genus and added on to it, and, secondly, that the relation of genus and differentia is not a merely relative or reciprocal one; the same term cannot appear indifferently now as genus and now as differentia.

§ 158. We have thus reached a very different idea of the relation of genus to species; one also which seems to have an affinity to the natural use of the corresponding words in language. . . . We must seek to determine more precisely the nature of this relation. In the instances taken we cannot represent the genus as a part of the whole specific conception. The genus includes all there is in the species, there is nothing left over. The differentia cannot be separated from the genus as something added on to it, it comes from within it. The species is a necessary development of the genus, even and odd are not outside number but necessitated by its nature as number, line as line must be straight or curved, it does not wait to receive this determination from something outside itself. The genus in fact is only an incomplete abstraction, when separated from the species. We may say if we please that it is a common element in the species, but this formula is a dangerous one because it suggests that the genus is in the species with something other than itself. It *is* a common element, but then in the species there are nothing but special manifestations of the nature of this common element itself. It is more than any one of the species, in the sense that any one of them is only a part of its total reality, of the complete meaning of the genus. In this sense we may say the genus is the species, and the species are the genus. The universal is less than any one of the species only when represented in our subjective and incomplete abstraction. In reality the genus and species are entirely inseparable. We must, however, avoid the mistake of identifying on this account the genus with the mere sum or aggregate of its species, or with any one of them. That would be to omit their community. The genus is rather the unity of which they are the necessary

manifold expressions, a unity which necessitates its own plurality from within.

§ 159. We may help ourselves to grasp the relation intended, by such phrases as that the species is a realization of the genus, and that the genus is potentially the species. This is one view taken by Aristotle in the *Metaphysics*,[1] [a] where the genus is represented as the matter or potentiality of its species. This thought requires to be carried further, to the relation of the species to the individual The individual is the fully realized universal, the realization of the species, as the species is of the genus. As the universal as genus demands of itself its realization in the species, so it is the nature of the species to demand of itself realization in the individuals The totality of the individuals is the realization of the species and this is the answer to the ancient difficulty, which is also a modern problem, as to the relation of the one universal and the many individuals. This formula of potential and actual (real) may stand if we remember to abstract from it any implication of time as such. The universal or genus cannot exist except as realized in the species but it is not something prior to them in time, itself an actuality containing them only potentially. That is no doubt the implication in common speech of these words, as when we say the acorn is potentially the oak But the universal is not what physical potentialities are, an actualizing potentiality in relation to something future ; actual in itself but containing the species only potentially. It has no actuality except in the species It is true that the species in which the genus is realized may be temporal and may appear in a time order after a previous realization of the universal But this does not make the universal prior to such later realizations, but only makes one realization of it prior to another Shortly, the relation of time subsists between the realizations of the universal and is not a relation into which the universal itself enters at all in contrast with its species.

It is perhaps advisable to choose some distinctive word and

[1] 1024^{b} 8, 1038^{a} 5

[a] *εἰ οὖν τὸ γένος ἁπλῶς μὴ ἔστι παρὰ τὰ ὡς γένους εἴδη ἢ εἰ ἔστι μὲν ὡς ὕλη δ' ἐστίν (ἡ μὲν γὰρ φωνὴ γένος καὶ ὕλη . . .)* 1038^{a} 5, cf. 1058^{a} 23]

call the species a determination or differentiation of the genus; for although this explains nothing, it may guard against a misunderstanding of that peculiar relation which we have been trying to recognize. We recognize rather than explain it, for explanation usually means the reference of the thing to be explained to something similar to but not identical with itself. This relation is *sui generis* and therefore defies explanation, is not expressible in terms of anything but itself.

§ 160. We have then two kinds of classes. Symbolizing the elements by AB, in the one kind, A, though it may involve B, is not a determination of B, nor B of A, though it may involve A, in the second kind, one of these elements is a determination of the other. It is this difference that really determines the usage of language. In the first case it is neither natural nor normal usage to represent AB as a kind or species of A or of B. No doubt it is somehow felt that sphere, for example, does not include, in its own nature, golden sphere On the other hand we have no difficulty in speaking of red as a kind of colour, or of triangle as a kind of figure The tendency of language then is in favour of recognizing the second as the true application of these kinds of words The obvious mark of the distinction between the two kinds of class is the indifference with which in the one case either may be taken as genus or differentia, whereas in the other it is impossible to reverse the order. The ultimate agreement between them is the contrast between the wider and the narrower class, where wider and narrower refer to the extension. The class A includes the individuals of the species AB, whether B is or is not a true differentia of A.

§ 161. The logical theory of division originates in the fact that the genus includes its species as a plurality and the species its sub-species. This suggests the question whether any general rule can be laid down *a priori* for the subdivision of a genus. Let A and B be the elements of a given general conception. One may be either a differentiation of the other or not. In the latter case we may further distinguish two kinds. First that in which A and B seem indifferent to each other, and secondly that in which A involves B, but not in the way of differentiation. Thus in three-sided (closed) rectilinear figure the possession of

three sides involves the possession of three angles, but neither of these two attributes is a differentiation of the other.

In the division of a class then we have these three cases to consider. The data of the division are, first the differentiation to which each of the elements A and B is liable in itself, and secondly the fact that A and B are not alone but in combination. Case I. Take the case where neither of the elements A and B necessitates the other. Let the differentiations of A be a_1 a_2 a_3, &c., and of B, b_1 b_2 b_3, &c Though the nature of the one element does not necessitate the other we cannot assume that any member of the series a_1 a_2 &c can be combined with any member of b_1 b_2, for A and B are in combination and this may limit the possibilities of combination of their respective differentiae. Thus we have *prima facie* two cases that in which the differentiation remains free in spite of the combination of A and B, and that in which the combination of A and B prescribes certain limits to the combination of their differentiae. Case II. Let A and B involve one another Here it might be supposed that the possibilities of combination were limited, inasmuch as the elements involve one another. For instance, the possession of three sides by every triangle necessitates the possession of three angles, and the differentiations of the sides in respect of ratio condition the differentiation of the angles, i e. their magnitude. The differentiations of the one then are not free from influence by the differentiations of the other. But this is not universally the case A certain closed surface necessitates a certain enclosed volume, but the various differentiations of the surface may be combined indifferently with any differentiation of volume in respect of quantity. Thus a given volume may be enclosed by a surface of any shape whatever. But, in this case, there *is* nevertheless a limitation of the freedom of differentiation if we choose a different principle of division. Although it is true that the magnitude of a given volume cannot determine the shape of the surface which encloses it, yet, if the shape be given in kind, the volume does determine the differentiation of certain of the elements of the shape. If, for instance, the shape is to be spherical, spheres are differentiated by the length of their radii, but a given volume determines one radius only. Or, if the shape is to be a parallelepiped, the magnitude

of the volume enclosed does not indeed fix any of the dimensions of the enclosing surface but it does determine their differentiations taken all together. If we choose arbitrarily a certain length and breadth, we cannot choose any height we please. The three dimensions together are controlled by the rule that their product must be equal to a constant. In certain directions then the differentiation of the two elements is independent, and so again the differentiation of the body enclosed is independent in respect of quality of all differentiations of the surface whether of kind or magnitude.

In each then of these two principal cases we have *a priori* the alternative possibilities of a free or a determinate differentiation. The information necessary to settle what is actually true of any particular class, whether the differentiations are free or not, and, if so, by what law they are controlled, cannot be supplied by logic but must be got by experience and from the special sciences Logic can only formulate *a priori* the different general cases and the two possibilities of free or limited differentiation. Case III. Finally, where B is a true differentiation of A, we have only to do with the free differentiations of the one element A.

§ 162. In the preceding we have stated the data for dividing a class. If we wish to distinguish the species, we must do it by considering the various differentiations of the elements in a given universal and the law of their combination as affecting in them the combination of these different differentiae.[a] Division of a class, however, is not necessarily understood to be an enumeration of all possible species Sometimes we only seek for a division which may exhaust the species in this sense, that the classes we assign, while mutually exclusive, contain all other possible species under them. Such a division may be reached by differentiating one element only of the general conception, for clearly the species formed by combining the other elements of the original notion with a complete set of differentiae of the one chosen must be exhaustive By a complete set of differentiae is here meant not all differentiations of A but the complete set

[a A species in modern botany includes 'all individuals which resemble each other sufficiently to make us conclude that they are all, or may have been all, descended from a common plant', *British Flora*', Bentham & Hooker, p. xl Cf. Essay II in Dr. Poulton's *Essays on Evolution* (Oxford, 1908)]

allowable to it when combined with B and C. For instance, if ABC is the original notion and a_1 a_2 a_3 are the complete differentiations of A for this purpose, an exhaustive and exclusive division of ABC is clearly a_1BC, a_2BC, a_3BC. The element thus selected is the so-called *fundamentum divisionis*. The ordinary rules about the fallacies to be avoided in division need not be here discussed. It is obvious that a complete differentiation of the class proceeds by differentiating simultaneously all the elements and taking such combinations of them as the rule of the original combination permits, and it is here that the idea of co-ordination arises. Let the elements of the genus be A and B. Suppose the first determinations of A are a_1, a_2, a_3; these are said to be co-ordinate as being immediate differentiations of A. Let the immediate differentiations of a_1 be a_{11}, a_{12}, a_{13}; these also are co-ordinate with each other but are not co-ordinate with a_1, a_2, or a_3. Thus co-ordination is the relation of certain species to one another, as being all alike members of one differentiation of a common element They are said to be subordinate to the common element differentiated If now we have species of the form $a_1 b_1$ and $a_2 b_2$ (where b_1 and b_2 are co-ordinate differentiations of B), since these two complexes result by immediate differentiation of A and B are they also co-ordinate? The answer according to the normal use of the word co-ordinate would seem to be 'No'. Co-ordination appears normally to refer to the differentiation of one single element. Thus $a_1 b_1$ and $a_2 b_2$ would be co-ordinate only as subordinate to A and through the co-ordinate differentiation of A into a_1 and a_2.

§ 163. There is another relation usually recognized between these immediate differentiations of a common element. They are sometimes said to be opposed So Aristotle defines opposites [a] as the members of the same genus which are at the farthest distance from one another But in some genera we do not find it natural to speak of the species as opposed to one another at all. We do not, for instance, naturally ask what is the opposite of a square. Again it is often impossible to determine what

[a] Cf besides *Categories* 6[a] 17, p 366, note 1, *τὰ ἐν ταὐτῷ γένει πλεῖστον διαφέροντα ἐναντία*, *Metaph.* 1055[b] 28, al. We cannot translate 'contraries' though that is nearer to what Wilson means than the generic word 'opposites'. He wrote *ἐναντία* in his MS]

members of a classification, even if we do not actually use the word opposition, have the maximum difference from one another. The species sometimes form a series which either terminates in neither direction or only in one. Of the former kind is a series of differences in intensity;[1] of the latter kind is the infinite series of rectilineal figures beginning with triangle. It must be noticed that we are dealing with a question partly linguistic and partly technical and the difficulties which concern the use of the word 'opposite' apply also to its Greek correlate.

We also distinguish opposition and contradiction. Contradiction is the mere negation of a given species and the contradictory therefore includes all the species co-ordinate with the given one. The opposite falls within the contradictory, and is considered, in some sense, as the extreme of difference within the given genus. What does this exactly mean and to what kinds of classes is it applicable? If in a given classification we cannot get extremes of which we can definitely say that they have the maximum difference, it does not follow that we cannot distinguish degrees of difference. We may still be able to say that the species A is more opposed to the species B than to the species C. Perhaps it might be said that the meaning of opposition is that the opposed species are entirely incompatible and cannot coexist in the unity of the same subject For instance, moral good and moral evil might be opposite, in this sense. But this is obviously true of all co-ordinate species; each one excludes every other Isosceles triangle is clearly more akin to equilateral than to scalene triangle, yet properly understood the isosceles triangle cannot be equilateral. Orange is more akin to red than to green, but the same colour cannot be both orange and red; and so of the notes of a musical scale This therefore will not do for a definition of opposition

Perhaps the true account of what is implied in the normal use of opposition in reference to species of the same genus may be as follows. Suppose the generic element is differentiated according to a principle which produces a series of species in

[1] Cf. Plato, *Philebus*, [24 D,[a]] qualities like hot and cold.

[[a] The reference seems to be that given in the foot-note *προχωρεῖ γὰρ καὶ οὐ μένει τό τε θερμότερον δεὶ καὶ τὸ ψυχρότερον ὡσαύτως . . . ἄπειρον γίγνοιτ' ἂν τὸ θερμότερον καὶ τοὐναντίον ἅμα*]

a certain order. (We may leave the kind of order undetermined, provided only that it be an order.) Then one species as a member of this order, if not the first or last in order, will have one before it in the order and one after it. It will be nearer to these, in the sense of the particular order, than to any other member of the series. Thus in the series of natural members 4 is nearer to 3 and to 5 than to any other number. And in general, in the order ABC, we may say there is a greater difference between A and C than between B and A or B and C. This seems to be what is meant by comparative opposition, when we say one species is more opposed to another than it is to a third. If there is a definite beginning and end to the series, the beginning species and the end species are clearly farther from one another than are any other pair.[1] [a] This corresponds to the idea of absolute opposition, Aristotle's 'opposites'.[2]

§ 164. But it does not follow that relative or absolute opposition should be found in every class. Neither will be found in the division of a genus unless the principle of differentiation is one which produces an order. Thus in certain divisions of plants and animals we do not think of using the term opposition. If there is an order, but the series has not a definite end and beginning, there is only relative and not absolute opposition. Thus the series of integers has a beginning but no end and there is no absolute opposition. Again, any geometrical series may progress *ad infinitum* in both directions from a given member, and the series of finite portions of a straight line is infinite in a positive and in a negative direction from a given finite portion. The subject is well illustrated by observing that if we differentiate a genus by two different principles, producing two different orders of the *same* species, we shall have different ideas of opposition. If we differentiate 'conic section' by the angle which the cutting plane makes with the axis of a circular cone, we shall have the hyperbola, the parabola and the ellipse, as the angle is less than, equal to, or greater than, half the vertical angle. Here hyperbola and ellipse are most opposed.

[1] τὰ πλεῖστον ἀλλήλων διεστηκότα . . . . ἐναντία ὁρίζονται *Cat.* 6[a] 17.

[2] ἐναντία

[a] Rather 'any other two opposed species'. On the general subject see Hegel, *Logic*, (Encyc.) § 119.]

If we differentiate however by the distinction between central and non-central curves, ellipse and hyperbola will be grouped together and opposed to the parabola.

In the mathematical illustrations the order is definite in such a way that we can state definitely the difference between the species; but we may be able to place the members of a genus in a certain order and to recognize a greater affinity between one pair than between another and yet have no definite statement of the nature of the difference between them. Thus in the order of colours, we recognize that orange comes between red and yellow There is an affinity between red and orange and between orange and yellow and more in each case than between red and yellow This results from an immediate perception of colour, not reducible to terms of anything else. So with the order of musical notes in a diatonic scale. We recognize an order of pitch and are certain that in that order the mediant, for instance, lies between the tonic and the dominant, and that the sub-mediant follows the dominant, in the ascending order. We can say no more of it and need to say no more than that it is an order of pitch which we recognize as certainly as an order in space.

§ 165. There remains the method of dichotomy. This takes one differentia and divides the whole field of a class into the members which have this and those which have not. This method, as Aristotle says, is exhaustive; but then the negative class as such admits of no further division or, as he puts it, 'there are no differences of negation, merely as negation'; [1] mere negation contains no principle of differentiation and therefore there is no real gain in the apparent exhaustiveness.

§ 166. It follows from what has been said that the complete and true method of dividing the universal is by co-ordinate positive differentiae.[2] But now the question arises how we are in practice to effect such an exhaustive division. If we suppose (as the common logic seems often to do) that we begin with the perfectly determined individuals (with the maximum, that is, of intension) and then proceed by abstraction to universals and

[1] *Ἔτι στερήσει μὲν ἀναγκαῖον διαιρεῖν καὶ διαιροῦσιν οἱ διχοτομοῦντες, οὐκ ἔστι δὲ διαφορὰ στερήσεως, ᾗ στέρησις· ἀδύνατον γὰρ εἴδη εἶναι τοῦ μὴ ὄντος De Part. Anim.* 642[b] 21. [Cf. §§ 460–476]

[2] *ἀντιδιῃρημέναι διαφοραί, Top* 143[a] 36

thus to complete classification, division will appear merely as the inverse of that process, implying the previous process to give it its material. This however does not correspond to the actual process of thought. We are presupposing that which is wanted as already done, and all we should be doing would be a mere matter of arranging species in an order of subordination and co-ordination This we could not fail to do, provided we had them at all. Classification and division are not a mere formal, or so-called logical, operation performed on a given matter. The process is not formal at all but has to be effected in the sciences as distinguished from logic and depends entirely on the particular subject-matter. Thus the differentiation of plane triangle into acute, right-angled, and obtuse depends in Euclid on many propositions which terminate with the conclusion necessary to the classification, namely a proof that the three interior angles of any plane rectilineal triangle are equal to two right angles The species of triangle then are necessarily, one with three acute angles, one with a right angle and two acute angles, one with an obtuse angle (an angle greater than one right angle) and two acute angles. Similarly, elsewhere, no *a priori* rule can be given to determine the classification of a given subject-matter. It is, however, possible to lay down one general principle. Exhaustive division, not in the sense of complete enumeration of every possible species but in that of a division into classes which include all, is not attainable in the case of objects so far as they are known only *a posteriori*. We can never assure ourselves from mere observation that the list of species of a given genus is complete. Completeness is possible only in the case of universals which we can deal with *a priori*, where the mind so far sees into the nature of the universal that it can discern the determinations which it involves. This may be immediate, as where we divide lines into curved and straight, or may be reached immediately by a proof or series of proofs, as where we divide plane triangles into three species. This is possible in (pure) mathematics. The process by which the differentiation is then carried on is nothing less than the mathematical demonstration itself and thus dependent on the particular character of the science. Empirical science can only aim at this as an ideal and can only classify such

material as it has got. It must always have before it the possibility of the discovery of new differentiae and can never regard its division as exhaustive save in the barren way of dichotomy.

§ *167*. We have seen that the word 'kind' seems linguistically more appropriate to those species in a classification which are true differentiations of a genus. This seems to be the simplest distinction of kind, as when we say blue and red agree in kind because they are both colours, whereas heavy, blue, cold, double, crooked, quick is a group lacking a common basis of classification. These adjectives, we should say, differ in kind and our meaning would seem to be that there is no common element of which they can be regarded as determinations except the entirely empty notion of 'being', which is common to all notions whatsoever. But language often opposes a difference in degree to a difference in kind, and here the word kind has not quite the same signification. In this use universals are said to differ in degree or quantity when they are determinations of some common element in respect of the more or less; whether this variation is measurable as in geometrical quantity, or whether it is a mere more or less, not admitting of definite measurement, as in the intensity of our sensations. A difference in kind or quality opposed to this does not mean the absence of a common element but only that the determinations of the common element are not determinations of degree, that is, in respect of the more and the less. In this sense red and blue would be said to differ in kind, because the differentiations of their common element colour are not in respect of quantity or degree A brighter and a fainter red on the other hand would usually be said to differ in degree and not in kind.

§ 168. In this connexion we meet the paradox that a difference of degree may sometimes amount to a difference in kind. The statement is paradoxical because it seems to identify two sorts of difference; yet we observe that the phrase stops short of absolute identification. For 'is' we have 'amounts to'. We shall find in the cases to which this paradox is applied that it is not true that as one element varies in degree there comes a point in the variation at which a difference of kind appears in that same element. Sometimes two elements are concerned which

are somehow connected with one another and, while one varies in degree, there is a corresponding series of changes in kind in the other. The paradox comes from a confusion of the one with the other. To variations in degree, for instance, in the physical occasions of our sensations there may correspond differences in kind in the sensations themselves. Thus, in the theory of colour, the wave length varies quantitatively and the corresponding colour varies in kind. But the variation in degree is confined to the physical causes and does not enter into the colour series at all. What is of interest in such a case is that variations of degree in a cause may determine not variations in degree but variations in kind in the effect. Again, if the difference in curvature between a closed and an open curve be considered a difference in kind, the change in kind of curvature of the conic sections as the position of the cutting plane varies in degree of angle, a variation of kind accompanying a variation in degree, belongs to this head. We have already noticed this case and the analogous case of the change from a curve of two branches to a curve with one branch.[1]

There is another group of cases where there do not appear to be two but only one element with changes thus corresponding. In the case of a sensation of warmth, as the degree of temperature—the physical condition of the feeling—diminishes, it may be thought correct to say that the feeling is approaching the sensation of cold. The feeling diminishes in degree until the zero point of warmth is reached. As the physical conditions continue their variations in degree, we may gradually begin to feel cold and the sensation of coolness may increase in degree of intensity. The truth here seems to be that in the variations of the sensation of warmth, there is a common element in respect of which the sensations may be said to differ in degree. But the series of decreasing sensations of warmth do not pass into the series of increasing sensations of cold, for these two have no common element, except sensitiveness to heat and cold. The diminishing series ends in an absence of the sensation of warmth, that is there is no sensitive feeling at all, either of warmth or of cold. Thus the state arrived at is not in an identical series at all and so is not a sensation which belongs to

[1] § 164.

and connects both series. When we enter the series of sensations of cold, we enter a new series and not a continuation of the old one. This new series consists of variations in degree of a common element of cold, which is different in kind from the element common to the first series. These two common elements cannot be regarded as varieties in degree of one and the same element. They are species of sensitiveness to heat and cold and differ in kind, not in degree. The thing left out of account which contributes to a confused view of the question is that the physical conditions on which the continual change of sensation depends have varied all the time in the degree of one common element while the two series of sensations were varying in the degree of two successive elements. The termination in zero of one series no more leads to, or begins, a new series of sensations of cold as such than it leads to, or begins, a series of sensations of pain, like a smart or a toothache.

§ 169.[a] From an early period in the history of logic distinctions have been made between different sorts of classification. There has been a tendency to regard some classifications as truer, or more important, or more natural, than others and to deem some genera as of higher rank than others and as more natural kinds. Thus in Aristotle there are genera and species which seem to have a special claim to be so called. They are thought of as the truest genera and species and the tendency seems to find something like formulation in the phrase 'secondary essences' as used in the *Categories*.[1] There has, however, always been great obscurity as to what this higher value or rank consists in. In this spirit a distinction is sometimes made between a natural and an artificial classification, in the writings of Linnaeus for instance and in some more modern botanical and biological authors.[2] But we look in vain in such writers for any clear idea of what they mean by a natural as distinguished from

[1] Cf. §§ 438–50.

[2] See Whewell, *History of the Inductive Sciences* (New Ed 1847), Bk. XVI, chs. 1–5.

[a] The author's criticism here appears somewhat pedantic; contrast § 180. The greater naturalness of the later classifications, compared with the Linnaean, lies in the fact that the latter's arrangement was *numerical*. The history of systems of botanical classification is very clearly set out in *The Elements of Botany*, by Adrien de Jussieu (trans J H Wilson, 1849), pp. 509–37.]

any other classification. It is impossible to construct a clear idea from what they say and they seem never to realize clearly what they want. Thus they tend to define the word natural by itself. Whewell, for example, says that certain classes are natural inasmuch as the division employed brings together those plants which are naturally related,[1] and Linnaeus' own confusion is illustrated in Whewell's *History of the Inductive Sciences*.[2]

We may find some help by considering a botanical system presented to the world as a natural classification, that of the two de Jussieus.[3] We see that one of the main characteristics which determined the classification was the number of cotyledons. It is a fact that monocotyledonous plants agree with one another in a vast number of details besides this character and differ in the same particulars from dicotyledonous plants. There is, however, no apparent connexion between these details and the character chosen as a differentia.

§ 170. This suggests the explanation that the principle which appears more natural is one to the differentiation of which corresponds the greater number of other elements in the objects to be classed Behind this is the idea of necessary connexion, however dimly realized. Just as a variety in the general definition of a conic section necessitates every other variety and difference between the species, so the ideal principle which modern scientific students are feeling after is that of a universal which includes the whole nature, not merely a part, of the thing classified, in the sense that the particular form which the principle takes in a particular species determines necessarily every particularity of that species. Clearly the secret and imperfectly understood reason for preferring one principle to another in such cases is that one principle—the one which seems natural—is in this way far more of an index into the nature of the object than the other.

This difficulty which the empirical sciences have in determining what is a natural classification in a given department is due to the fact that the advance of knowledge alone can show that one principle is, at least as far as we have gone, of wider embrace than another. The investigation being *a posteriori*

[1] Whewell, *History of the Inductive Sciences* (New Ed. 1847), XVI. 3, § 2 (vol. iii, p. 313).

[2] ib XVI. 4, § 5

[3] ib. XVI. 5, p. 369.

gives us no insight into the necessary connexion between the variations of the given element by which we are classifying and the concomitant variations of the other elements. As long as we have no insight *a priori* into such connexion we cannot be sure that the element chosen includes in the above sense the whole nature of the thing which is to be divided. The ideal can only be obtained in an *a priori* science where we can understand the necessary connexion. In the empirical sciences the ideal can be only approximated to and the form of the supposed natural classification in any such science is liable to continual modification as the science advances

§ 171. The tendency to look on some sorts of classification as specially real, by comparison with others which are artificial, has found expression in Mill's doctrine of real kinds. There is a great contrast, Mill thinks, between classifications of things by such attributes as blue or heavy and those by such universals as plant or animal. The former he thinks arbitrary or artificial, the latter he names real kinds and he thinks it would not be wrong to say that while real kinds are a distinction in nature itself, the other kinds or classes are made by us for our own convenience. The distinctive characteristic of a real kind seems to be that it comprehends an inexhaustible number of attributes, so that the members of a real kind agree with one another in an infinite number of characteristics and differ also in the same manner from the members of other kinds. The characteristic of the kind which is not real is that the attributes on which it depends are easily exhausted. The class of blue things differs from that of red only in the finite attribute colour. We have then to ask, is a mathematical notion like triangle a real kind or not? It would seem from the examples that Mill takes that it ought not to be a real kind because, although the attributes of a triangle are inexhaustible, yet they are exhaustible in the sense that they are all derivable from a finite number of attributes in the definition of a triangle. Thus infinity of attributes does not constitute after all the nature of a real kind, although it is the characteristic Mill most insists on. We must have infinity of attributes together with the impossibility of deriving that infinity from a finite group of attributes.

Now, in the first place, we naturally ask what evidence an

empirical philosopher like Mill has of the existence of such kinds. Observation could never show in regard to any supposed real kind that its attributes were anything but finite. The reality of an infinity can be known only *a priori*. Moreover, how could we tell that the fact that a certain number of attributes had not been derived from a given finite group was anything but an imperfection in our knowledge, and thus that, even assuming an infinity of attributes, real kinds would not pass into artificial kinds if we only knew enough? This brings us to a second difficulty and we ask what reason there is for the preference shown to the real kinds. The infinite attributes of triangle, an artificial kind, all follow from the familiar simple definition. The real kind, with its infinite attributes, is a sort of chaotic ununified infinity. For our purposes, at all events, the advantage would seem to lie altogether with the non-real kind. And how does Mill know his real kinds? He must assume that we assign individuals to a definite kind on the ground of some attribute or group of attributes, which is definitely determinable and is the mark, as logicians term it, of the kind. But this mark is useless unless its nature necessitates the presumed inexhaustible number of attributes and, in consequence, that infinity would be the consequence of this finite mark and the kind would cease to be real. Mill's idea then seems altogether self-contradictory. We may perhaps gather what was in his mind from the following extract: [1]

'A hundred generations have not exhausted the common properties of animals or of plants, of sulphur or of phosphorus . . . while if any one were to propose for investigation the common properties of all things which are of the same colour, the same shape or the same specific gravity the absurdity would be palpable.'

It may be replied that geometry undertakes to investigate the properties of objects that have the same shape, and that in one sense at least the investigation described as absurd is the procedure of all those sciences which isolate certain attributes of things for the purposes of study. Mill, however, clearly means something of this sort. It would be absurd to form a class of objects according to their shape and to propose to inquire into

[1] Mill, *System of Logic*[9], I. vii, § 4.

their common properties in general, without any reference to what depends on the shape, to ask for instance for the chemical or physical properties of spheres. What however would the investigator do who examined the common properties of sulphur? He must classify pieces of sulphur by some common mark and, by hypothesis, this common mark is not to necessitate the presence of the other properties of sulphur or sulphur would cease to be a real kind. He would, therefore, be examining a class of things to find out common properties in them which have no connexion with the mark or marks by which he classifies them. This is the precise mistake which to his mind makes the absurdity attaching to the non-real types of classification; classifying things, that is, as blue and then asking for the geometrical properties of blue things. It is clear that scientific investigation is only justified by the knowledge, or by the suspicion, that the properties we are investigating are necessarily connected with the properties which serve as the basis of our classification.

§ 172. We feel, however, that there is a difficulty, though we cannot admit that Mill has succeeded in discovering its true character. We may perhaps offer the following as an explanation. In our ordinary experience, whether rightly or not, we distinguish things and attributes, things as independent realities and their attributes as partial or dependent realities. Or the attribute may be represented as a part of the existence of a thing or, at least, as not exhausting the nature of the thing. Corresponding to these we have two kinds of universals, for we must avoid the mistake of supposing that the attribute is universal, and the thing itself particular The particular then which corresponds to one kind of universal is the individual thing. To that corresponds the habit of language in which such universals, as common terms, have a quasi-noun expression. The other kind of universal has for its particular what seems only a part of a complete reality, what is expressed in language by an attributive term. Here then the universal is understood not to comprise in itself the whole nature of a particular thing. This is why what Mill calls real kinds seem, as the phrase is, to go deeper into the nature of a thing, and this is really all that he tries to express when he speaks of these kinds as in some

way specially real. This again accounts for a certain mystery in his description of their inexhaustible number of attributes and of how the attributes cannot be got at through one universal from which they can be derived. Such universals of individual things are of a problematic nature: they contain this infinity as the thought of a potentiality which may be developed without limit. They do not in fact express the nature of a thing; they are rather the idea that there is a particular thing and that it has within it this infinitely developable nature. But Mill fails continually through not distinguishing the universal which is definite from the problematic universal which implies that there is something definite without determining what it may be. Such universals, in one way, do not include and, in another, do include the total nature of such a thing. They do *not* include it, in so far as they do not give a definite universal by differentiation of which one could arrive at the thing itself. They *do* include it problematically because they are the universals of particular things conceived as possible determinations (if we only knew how to conduct the process) of a unified universal. The more artificial character, in Mill's view, of the other classification simply means that the universals there are abstractions of particular aspects of the things and artificial in the sense that in Nature they are not so separable. This view agrees so far with what seems to have been the Aristotelian tendency. In the *Organon* the secondary essences [1] are described as those which are the proper genera and species under which the primary essences [2] are found These essences then are 'animal' and 'man' on the one side, and Socrates and the individual animals on the other. It is not to be understood that the Aristotelian logic arrived at a quite clear idea of what the distinction meant, but on the whole the distinction really intended seems to have been between universals like animal, which may be truly said to include the whole thing under them, and universals like whiteness,[a] which are such that the thing is sometimes classed under them, as when we say Socrates is *a* white (being),[3] yet are understood not to include within themselves all that the thing in its fullness means.

[1] δεύτεραι οὐσίαι. [2] πρῶται οὐσίαι. [3] Σ. ἐστι λευκόν τι.

[a] The word 'whiteness' is substituted for the neut. adjective λευκόν which the author used.]

XVII

DEFINITION

§ 173. DEFINITION seems properly a subject belonging to logic as a study of thought since it concerns a relation between things and classes and their constituent elements, considered generally and without reference to the particular nature of any individual relation of the kind. In the majority of cases a given attribute is recognized to belong to a subject and yet to express only a partial determination of that to which it belongs. Hence we are naturally led to ask whether a group of attributes can be found which embraces the nature of a thing or of a class completely. To this search corresponds the statement of Aristotle that definition is of essence or being.[1]

Again, the attempt to distinguish one thing or kind from another involves the recognition first of some common element, and secondly of something in which the thing or kind differs from other things, something peculiar to the thing or kind. Hence arises the question whether there is any attribute or group of attributes which will serve to distinguish a given thing or kind from certain others. The statement that definition is to be by genus and differentiae[2] is the outcome of this second question. The two questions correspond to the manner in which the search for principles of definition developed in practice. That the second probably attracted more attention at first we may gather both from the derivation of the word definition, which in Greek and Latin means fixing of boundaries,[3] and from the fact that the Aristotelian *dictum*[4] that definition is to be by genus and differentiae was accepted in the schools and from them has passed into the traditional logic. The other impulse, the search for a complete determination, does not so directly suggest the distinction of genus and differentia, but does in fact lead to the same inquiry in the end.[5]

[1] ὁρισμὸς μὲν γὰρ τοῦ τί ἐστι καὶ οὐσίας. *An Po.* 90^{b} 30.

[2] ὁ ὁρισμὸς ἐκ γένους καὶ διαφορῶν, *Top.* 103^{b} 15. *Metaph.* 1024^{a} 26, 1037^{b} 29 (πρῶτον γένος).

[3] ὁρίζειν ὁριζέσθαι, definire.

[4] Note 2 (above).

[5] § 257.

§ 174. The object of definition is sometimes said to be the thing or objective reality itself and sometimes our own conception, our subjective idea. The very idea of definition in the second case seems difficult, if not paradoxical. It may seem that we cannot seek to define our own conceptions because we must know what they contain before we begin, or else what is called the definition of a conception is either the definition of a word, and nominal, or only the arrangement of elements, already given and known, under the heads of genus and differentiae. The latter process, at any rate, might seem to be merely formal and of little interest or value. All this it may be seen implies that the idea must be clearly, i.e. explicitly, before us.

Again there is a kind of definition which seems to relate to the object, for appeal is made to instances in experience. This, however, seems to be equally trifling; the formation, that is, of a definition by abstraction of a universal from particulars. This case is really the same as the one we have just been considering, because the end which is sought for is really the determination of a universal as such. This process is formulated by Aristotle,[1] who represents it as starting from a set of similar individuals and comparing them with a second set, distinct in species but identical in genus, and so arriving at a genus by successive elimination of differentiae. Such a process seems to be wholly artificial and to presuppose throughout what it seeks to attain. In order to abstract magnanimity, we must know that the individuals taken are examples of it, and how are we to know that without already knowing what magnanimity is? Aristotle himself betrays the difficulty, for he says that, if we abstract from the members of one species of magnanimous persons and find a universal and then abstract from another group of individuals in another species, we must again compare these and abstract the common element from them: and, if there is one element common to all the species, this will be the common definition, but, if we do not find anything in common, we shall not end with one genus.[2] This of course implies that the process may fail, and is an inherent contradiction, but

[1] *An. Po* 97^{b} 7, seqq.

[2] *εἰ δὲ μηδέν, δύο εἴδη ἂν εἴη τῆς μεγαλοψυχίας*, ib. 97^{b} 24.

Aristotle neither recognizes this nor raises the question which it suggests. It is clear that the particular facts from which the abstraction is made are for the purposes of the abstraction ultimate. Hence arises the question of how we got at this basis and what we can do, if we do not find that we can unify the species under which these particulars seem to fall. The difficulty shows that there may be something wrong in the choice of these particulars as ultimate, and this makes it absolutely necessary to ask what is the guarantee that we have started with the right instances as a basis at all.

§ 175.[a] It may seem that we have only to reject this process as absurd, but the fact that such a theory could have been held and have become so popular cannot go for nothing. There is probably some process which does correspond to it, though the process has been inadequately formulated. The answer cannot be got out of mere general notions or the form of thought. We must look at the specific matter to which this process has in practice been applied. This matter seems to be our moral experience. It was the Socratic abstraction of moral notions which probably occasioned this logical doctrine of abstraction, and it is this process which Aristotle is representing in his account. The facts of this abstraction have already been sufficiently examined in earlier sections.[1] The truth is that the process is not one of analysis of a given complex, that is, it does not proceed from the more determined particular to the more abstract universal; it only appears to do so because the materials from which we start are fully determined. What we really do is to make determinate and explicit what was for us previously indeterminate and implicit. The general idea of affinity becomes the more determinate idea of what the affinity consists in. This explains the apparent paradox. It shows that there is something corresponding to the Aristotelian doctrine and how the misinterpretation of that doctrine arises. In conclusion it is useful to observe that we see the same thing in the working of our consciousness in other departments. In some

[1] Part I, ch 2, §§ 11–12.

[a] I have omitted here a long discussion of Socratic definition. The substance was later embodied in Part I, ch 2, § 12 Wilson's attitude was no doubt originally suggested by Green (*Works*, vol. III, pp. 55–8).]

cases we are even obliged to remain in the stage of recognition of affinity without being able to characterize that affinity further. Thus we recognize that colours have an affinity which is so definite that it distinguishes them from sound, but we are quite unable to say what the affinity of colours or sounds consists in.

§ 176. The attempt to find clear distinctions between objects produces the kind of definition which is said to be by genus and differentia and implies an explicitly known material to be arranged. There is another tendency, also in the direction of clearness, represented by the Socratic definition, which seems to be the effort to become explicitly conscious of a universal implicit in certain particular statements. There is a third tendency, somewhat different, the attempt to get at a universal which shall unify a manifold; to grasp in fact all the variety in the attributes of an object under one notion. This corresponds to the Aristotelian search for essence.[1] The very idea of this is, on the one hand, a comprehension of the whole thing and, on the other, a comprehension which is by no means the enumeration of all the possible attributes of what is defined. It is clear at once that this has an objective meaning and does not relate merely to the arrangement of matter already given. Whether such an idea as that of essence is valid or not, it is clear that it forms an important element in the effort of the mind to gain a mastery over the object. It may be noticed that this effort is wrongly formulated in the scholastic account of essence: but it must not be rejected on that account, or we may fall into the same mistake as that of Mill, the error of criticizing the formula and not understanding the activity of thought which has produced it. If we ask what essence is for Aristotle as comprised in a definition, we do not find any clear account, in so many words, of what essence is itself and this may explain in part the failure of the schoolmen. It is with him rather a fixed idea, by the help of which he defines the attributes contrasted with it. Thus in the *Topics*[2] essence, property and accident are distinguished. Essence and property are both necessary to the thing defined and convertible with it, but to distinguish them we are merely told that the property

[1] ὁρισμὸς μὲν γὰρ τοῦ τί ἐστι καὶ οὐσίας *An. Po* 90^{b} 30; cf. *Metaph.* 1037^{b} 25.
[2] τὸ τί ἦν εἶναι, ἴδιον, συμβεβηκός, *Top.* 103^{b} 7–19.

is that which being convertible with a thing is not of its essence. The distinction, however, of essence and property is the basis of Aristotle's theory of science in the *Posterior Analytics*,[a] and his use of these terms there implies that essence is that group of the attributes of a thing from which all other attributes follow or are derived, the essence being itself underivable, primary, and hence its own ground and, from the point of view of knowledge, self-evident. Further, this derivation is apparently objective as well as subjective: there is an order in the being of the thing as well as in our apprehension of it.

§ 177.[b] This conception appears at first sight to agree with the facts of mathematics, and this is perhaps why it seemed satisfactory to Aristotle. But really it involves two serious difficulties. It presupposes an absolute order of thought; implies therefore a certain dependence of one part of truth upon another. In actual demonstration, however, we find that we can reverse this order of essence and property, at least sometimes; that is, if we prove that A necessitates B we may be able to show also that B necessitates A. Aristotle was aware of this in so far as he teaches that the property is convertible with the thing of which it is a property. Yet he never faces the question which this suggests and never asks himself whether this does not destroy any absolute precedence of one element to the other. One may conjecture a reason for this. Possibly he had not before him instances where, in the reciprocal relation of two elements A and B, an independent start was made from A to arrive at B, and conversely. When a reciprocating condition is proved by Euclid, a *reductio ad absurdum* proof is normally employed, which assumes that the first condition has been established. When the proof is not *ad absurdum* the second theorem (as in i. 48) may still proceed by the help of the former.

A second grave difficulty is that it would seem impossible to ascertain what is the true definition or essence, because to know the essence as essence we must know that it accounts for all the properties, and therefore it would seem that we must first know all the properties. Yet the latter condition cannot be

[a] Especially Book II, passim

[b] This section is inconsistent with Wilson's later views, see sections referred to in the foot-note, p. 382.]

realized even in mathematics, to which this kind of definition seems applicable, because the properties may be infinite. Besides we have this paradox, that in mathematics instead of knowing the definition in this way from the properties we arrive at the properties from the definition.

But for the existence of mathematics the second difficulty would not be enough to threaten the validity of the idea of definitional essence. We might possibly never have an absolute definition, in this sense, but we might have a relative one; we might, that is to say, unify the facts which we know about a given subject by dividing them into two groups, one of which conditions the other, and this assemblage of the complex of conditions we might term the essence. Growing knowledge of a thing might then sometimes widen and sometimes narrow this essence. New elements might be discovered which we could not derive from the old essence, or, again, some of the elements, at first included in that essence, might turn out to be derivable from others of the group. Thus the complex of the essence would be diminished. Definition then would be an ideal by the aid of which we unify what we know, and this corresponds fairly to the present position of the empirical sciences. But it is otherwise in geometry; *there* we appear to know the essence first and to know that it is the essence without having to go all through the properties. Moreover, *there* no new knowledge can disturb the validity of the definition, because the very extension of our knowledge to new properties consists in their derivation from the definition itself. The reason of this lies in the special nature of geometry and consideration of it must be postponed to a later section.[1]

§ 178. The true method of dividing a class has been seen to be a development in an orderly series of the manifold underlying its unity. In definition by essence there is also a unification of the manifold. The essence is to be such an element or group of elements as may account for the manifold or even infinite attributes of the thing to be defined. Definition by mere classification will not satisfy the requirements which are implied in the search for essence nor necessarily conduct to the essence at all, but it can be applied to the essence itself and it

[1] See Part III, ch. 3, esp. §§ 257–8.

is important that it should be so applied, for the following reasons. It removes the individual from its isolation and indicates its place in the system of reality to which it belongs by representing its relation to other individuals and species whether in the way of co-ordination or subordination. Moreover, it tends to give us a clearer grasp of the subject of the definition taken by itself and may even lead to a more complete knowledge of the relation of essence and property within the individual. For example, it is true of every isosceles triangle that its interior angles are together equal to two right angles, and this might be proved of all isosceles triangles independently. But, as we know, it is a property not of isosceles triangles as such but of all triangles, that is of the genus. We may represent this symbolically as follows Suppose that A, an element of the essence, has the determinations a_1 and a_2, of which a_2 is a further determination of a_1. We may not have recognized the fact of this differentiation and, having the element a_2 before us, may have either demonstrated the attributes xyz of a_2 or have recognized their presence in a_2 by observation. Of these attributes x may depend on the most general form A, y on a_1, and only z upon the complete determination a_2 Now if we succeed in effecting the determination of A into a_1 and then into a_2, it is at once suggested to us to find out which, if any, of the attributes xyz depend upon a more universal form of a_2, say a_1 or even A.

A problem is thus suggested to the science, which the science itself must solve. It must not be supposed that the mere act of differentiation enables us to make these distinctions in the properties.

§ 179.[a] Science thus gains in clearness and completeness. We know what we did not know before, the true conditions of x and y. Science gains also in extent; we discover that such a property as x is independent of a particular differentiation and belongs to every species of A. This development of knowledge has been conspicuously illustrated in the modern development of mathematical science. With this is connected another important matter, the possibility of converting a scientific proposition. When we have disentangled the real condition of an

[a In lecture this section was illustrated in 1893 from certain analogous properties of curves of the second degree]

element we have always a convertible proposition: B conditions A, A conditions B.[1] And this gives us a test or sign as to whether our knowledge has the true completeness and the conditioned is referred to its proper condition. If the proposition is not convertible, we have still to seek the true condition and must analyse a_2 further. This analysis may result in such a differentiation as the one described or, on the other hand, in the discovery of a complex of elements within a_2, a part and not the whole of which conditions the attribute in question. Science gains a further advantage by a distinction of genus and differentiae within the essence. The thing defined is not only related to others but new attributes may be discovered in this way. Suppose that in two things which are otherwise very different we discern elements which are analogous to one another, in the sense that they are differentiations, whether co-ordinate or not, of the same genus. Suppose that, in the one case, we have demonstrated a property connected with one of these analogous elements. This suggests that we should look for an analogous property in the second, and we shall be prepared to find that the analogous property will differ from the property demonstrated in the first instance, partly because the analogous elements are not identical, and partly because they have such a different context. This may seem a very simple consideration, but, when applied to a given subject-matter, it has resulted in remarkable discoveries. Thus, remarkable analogies have been discovered between attributes which, apart from such a classification as is made in the definition, may appear so different that they would not in themselves suggest that we should look for any affinity. The suggestion is made in the manner described when we discover analogous elements in the essence of both. Moreover, we are led to look for new attributes in an analogous subject-matter where the investigation would otherwise not have occurred to us. There are instances of this in both the mathematical and the empirical sciences. The search for analogies has been very fruitful in biology in regard to the life of plants as well as of animals.

§ 180. These considerations perhaps explain the question previously raised[2] as to what is the real aim of scientific writers

[1] § 259. [2] § 169.

when they recommend some particular classification of their subject-matter as pre-eminently natural and as superior to other possible classifications. They may also explain why classification as such is useful to science in facilitating discovery, and not merely as a convenient or neat arrangement of the facts discovered. In the empirical sciences every advance shows the impulse to unify the manifold of what is known by the discovery of some ideal method of classification, which seems really to be the application of the true differentiating method to the essence itself. Certainly the guiding conception of so-called natural classifications seems to be that the elements chosen are such that to their variations correspond the maximum of variations in the total of the elements which are known in the subject-matter considered. The presupposition doubtless is that what is taken for the class universal necessarily conditions (though we may not know how) everything which there is in the individuals studied, just as the mathematical essence conditions everything there It is clear, from the considerations we have adduced, that such a classification gives a greater grasp over the matter of the science. Such classifications have then a two-fold use and meaning. They are a step in the discovery of the essence, which is inevitably presupposed as determining the elements which vary together, and they help us to discern the unity, which underlies the different manifestations of the real world, by extending the relation between the subjects of one science to those of another.

XVIII

DENOTATION AND CONNOTATION

§ 181. More than once I have referred to the confusion which, I hold, besets the subject of denotation and connotation. The mischief seems to me to be due to a serious want of clearness about the nature of *meaning*, some other results of which are pointed out in my criticism of the doctrine that the true subject of every existential judgement is the ultimate reality. In the following investigation I shall devote myself to a search for a positive answer to the general problem to which the theory of denotation and connotation seems to belong This is a positive supplement to negative criticism of traditional or current views advanced by me elsewhere. I shall follow this by another negative criticism which illustrates the method to be pursued in examining any discussion of denotation and connotation which may be found in the ordinary manuals.

In the case of any given writer one has to ask how he defines these terms, or, failing an explicit definition, what definition he really presupposes. One has then to inquire whether he is consistent with the definition, if he gives one, and whether he really employs more than one principle for the distinction he makes or assumes. If he explains the distinction only by giving instances of it or by describing the general cases of its application (and this is pretty much what Mill does), we must ask whether the terms have any meaning except as labels for the relations indicated If they are vindicated as simply meaning those relations, we must insist on knowing why these terms have been chosen as technical terms to designate the relations, instead of words which have no significance otherwise. Again, if they are mere labels, we can test their applicability in a given

[a This is redrafted from a manuscript note-book of uncertain date. The discussion is coloured by polemic against Mill and the *ordinary* logic. It represents fairly the view which Wilson always maintained in informal instruction Cf Part II, ch 8]

case only by substituting for them the account in ordinary significant speech of the relation of which they are the labels. The result of this will always, I think, be found disastrous. If, however, the word denotation is used as in ordinary speech, we shall find most extraordinary confusion to result. Any attempt to give a significance to 'connote' by making it equivalent to 'imply', as Mill tends vaguely to do, leads also to confusion.

§ 182. The distinction between denotation and connotation has to do with the meaning of words and with the relations which meaning bears to subjects and attributes, a grammatical distinction which is presupposed; to put it more generally, it has to do with the relation which a word may have to some attribute or subject with which it may be concerned. In the discussion of the distinction a word is sometimes said to be the name of something, where 'name of' has a sense which must be fixed by ordinary usage. Again, words are said to mean or to signify or to denote something, and here again we have non-technical expressions, the sense of which is fixed by usage The words connotation and connote are, however technical, employed in a novel sense. They cannot therefore be presumed to be equivalent to the words implication and imply, which are terms of ordinary speech. If they were, they would be superfluous, there would be no need for them Now we are entitled to use technical grammatical expressions, like subject and attribute, because it is precisely word-forms which we are to examine and word-forms distinguished into nouns which are proper names, nouns called abstract, nouns called concrete general names, and adjectives. But our question being what it is we must at first use no other technical terms. For, in the first instance, we have simply to inquire what the linguistic facts are and how these word-forms are related as regards meaning to the distinction of subject and attribute in their actual use We must not assume and employ the words connote and connotation, which are technical, because that would be to beg the question. The question is the legitimacy of the distinction conveyed by these words, as distinguished from denote and denotation, and it is just because this is not realized that the discussions of the question (so far as I know them) are quite futile. The question generally put as *the* problem is whether a given kind of word

has connotation or denotation, or both, and what is the denotation and what the connotation of a given word. This presupposes the legitimacy of the distinction (the very thing which I call in question) and, if the distinction is in fact false and illegitimate, attempts to answer such questions must result in confusion. We might as well ask whether this quill pen can be mended by kindness as well as by reproof, and, if so, by what sort of kind treatment. Thus, it is usually, perhaps always, taken for granted that every noun and adjective must have either denotation or connotation, if not both It is at all events assumed that every noun has denotation at least, the dispute turning on whether all, or only some, have connotation. But supposing it should in fact be true that some words of the above kind have no denotation, how particularly puzzling and confusing must be the inquiry as to what is the connotation and what the denotation of such words!

§ 183 We have therefore to inquire first into the linguistic facts involved in the problem before us and to abjure any new technical word until the facts compel its use, that is, until we come across some new relation for which ordinary speech has no accepted word Moreover, we must first consider words as they actually are used and not in abstraction from the use made of them in a particular sentence; when we do consider them in the latter and abstract way we must expressly say so or confusion will certainly arise. Indeed the confusion in the doctrine of denotation and connotation is caused partly by failure to remember this distinction. Now the relation of a word or grammatical form to any subject or attribute with which it is concerned is a matter of usage. It is not fixed by the grammarian or the logician, it depends on no logical or grammatical theory. We ought then to be able to ascertain definitely the relation as a mere fact of linguistic usage.

§ 184. Let us therefore first consider the use of 'name'. Mill treats all nouns and adjectives as the *names* of something. Consider then such nouns as *John*, *man*, *stone*; such adjectives as *virtuous*, *human*, *heavy*; and such nouns as *humanity*, *virtue*, *heaviness*, *weight*. We will first ask whether these nouns and adjectives are the 'names of' subjects or attributes, according to the normal meaning of 'name of' in language. *John* as

used ordinarily in any given statement is the name of a particular individual,[1] and we should say that this word *John* also means the given individual whose name is John. It is the name of an individual subject and not the name of any attribute of his, as (for instance) his height, his weight, or his virtue. Singular proper names then are in usage always the name of one person and mean only one person.

§ 185. Consider now 'concrete general names' like *man*. If we suppose that a word has always, like a proper name, to mean that of which it is the name, of what is *man* the name, and of what is *stone* the name? *Tree* in a given sentence may refer to a particular tree, but it does not follow that it is the name of that tree. In 'this tree is hollow', it is only the combination 'this tree' which means a particular tree. In this sentence then, if anything could be the name of the tree meant, it would be *this tree*. Yet it would be contrary to linguistic usage to call such a combination a *name* of the thing meant, to say that 'this tree' is the name of the object pointed at. The same holds of *the tree*. If again we abstract *stone* and *tree* from their use in given sentences, we cannot say that they are the names of a given stone or tree, for they would by hypothesis have then to mean *that* stone or *this* tree and no other, and this they certainly do not. Tree then is not the name of any particular tree. Neither however is it the name of the universal of tree, for if that has any name it would be such a word as 'tree-ness'. Neither therefore in use nor in abstraction could we say that such common nouns or general names as *tree* are the names of either subjects or attributes, if a name has to mean that of which it is the name, nor the names of the universals of subjects or attributes. We may, however, note in passing an ordinary usage by which general names are called names of something; as, for example, when we say 'Gill is the name of a certain measure', 'Ibis is the name of a certain kind of bird'. This has interesting implications which need not detain us now.

§ 186. We will next consider abstract nouns like *weight*, *heaviness*, *virtue*. Heaviness is naturally and rightly said to be the name of the universal, and it means that of which it is the name

[1] The primary application, in the development of language, of the word 'name' is probably to proper names.

and nothing else. This is so, if we consider it in use, for though an expression like *this heaviness* refers to and means the weight of a particular thing, the *word* heaviness in the combination does not; it still means the universal, since this heaviness is equivalent to this particular instance of heaviness. The same holds if we abstract heaviness from its use in a particular sentence; it is in general a word which is always to be used for the universal, as meaning it and as its name. Thus abstract names like heaviness, whiteness, courage, are names as strictly as proper names. Indeed an abstract noun is a *name* even more completely than a proper name is, for the word John in abstraction (as it might be found in an English-French dictionary, for instance) cannot be said to be the name of anything at all. Strictly it is only a word such that when used in a given sentence it is the name of an individual male person. An abstract name is a name whether considered in use or in abstraction.

§ 187. Consider next adjectives. Mill and other logicians speak of them, without any scruple, as *names*. Of what then is an adjective like *heavy* the name? Mill would answer that *heavy* is the name of heavy things, whereas *heaviness* is the name of the attribute, weight, and so for other adjectives. But now heavy is *not* the name of heavy things. If anything is, it must be precisely the word combination *heavy things*. In use, heavy is neither the name of heavy things, nor of any heavy thing; it means neither the heavy thing nor its heaviness; it is not the name of its heaviness nor of heaviness in general. In use, then, it is the name neither of a subject nor of an attribute (particular or universal) *A fortiori* it is not such a name in abstraction, nor is the account of it, in abstraction, that it is a word which in use, that is, in a particular sentence, is the name of a particular heavy thing (subject) or a particular heaviness (attribute) In no legitimate sense, then, of 'name of' is *heavy* the name of anything. The same must be said of adjectives which do not refer, as it might be argued, to *attributes* because they refer to the whole being of a thing, as subject or substance. Such adjectives, for instance, as *human*, which in ordinary untechnical speech [1] are rare, are not properly *names of* anything.

§ 188. Consider now the relation of *signify* and *mean* to the

[1] See § 78 on the expression of universals in language.

subjects and attributes with which word-forms are concerned. To decide whether a word means some given thing we must see whether some word which is acknowledged to have that meaning, that is to mean the given something, can be substituted for the word in question in a sentence. The proper name *John* has to do with individual subjects, men in fact. Such subjects are, as such, subjects of attributes. What does the word *John* mean? How again is its meaning related to such subjects and such attributes? In a given sentence *John* means a particular man who is a subject of attributes and is certainly thought of as such in the use of the word. The word *John* does not mean any attribute of the man, does not mean, for instance, the height of the man nor his virtue. Again, *John* clearly does not mean any group of the attributes as attributes, nor even all John's attributes as attributes. It certainly means a subject which has such attributes as we know with an indefinite number of others, but that is not the same as meaning the attributes.

To take an illustration from other matter, *this clock* means the object I am pointing at, understood (as a clock) to have a pendulum, weights, and wheels But *this clock* does not mean the pendulum nor the weights, nor the pendulum and the weights and the wheels; it means the clock as the organism which has these organic parts. Thus, to mean something which is necessarily thought of as having distinguishable parts or elements is not to mean any such element or any group of them, or even all of them as elements, but is to mean the organic unity of them. Just so, then, of the elements distinguished in a subject as its attributes The word which means such a subject as John in a given sentence means an individual man as subject of attributes and not the attributes as attributes. This is then what the given word John does *not* mean If then it does not mean attributes, does it mean a subject? It certainly does, and it means moreover a subject as a subject. Here, however, we must guard against a misunderstanding. The word John does not mean a subject as abstracted from and distinguished from its attributes, but a subject as having attributes, as being the subject it is, having the attributes it has. But a subject *as* a subject, or as the subject it is, is a subject as subject of attributes or as subject of the attributes it has. This

then is the meaning of the given word *John*, in the given sentence. It does not mean attributes as distinguished from subject, nor subject as distinguished from attributes, but the subject as the unity of the attributes.

§ 189. This seems also to be a complete account of the relation of the attributes and subject to the meaning of the word, and one doesn't see where any new terminology is required. For instance, we can't correctly say that something (say attributes, or say subject) is *directly* meant and something *indirectly*. The distinction of direct and indirect cannot be applied at all to meaning; the attributes, for instance, are not indirectly meant, nor is their unity as subject. No meaning could be given to the expression 'indirectly meant' in the case of the attributes. John may be a person I know as red-haired and courageous, but *John* does not mean the red hair nor the courage, either directly or indirectly; *John* means the man who has these attributes.

§ 190. Nor, again, can we find any use for *primary* and *secondary* as applied to the meaning. For instance, it is not true that the subject as opposed to the attributes, or the subject as having the attributes, is *primarily* meant and the attributes secondarily. Neither the subject nor the attributes are meant *at all* in abstraction from one another. What is meant is the whole of which the attributes are elements, and the whole is meant as having these elements To say that because the attributes are elements in the whole thing meant they are therefore meant *secondarily* is quite nugatory and nonsensical, for the only explanation we could give of the phrase 'secondarily meant'—and this would certainly need explanation before any use could be made of it—would have to be that they are elements in the thing actually meant and meant as having them. Similarly, if we said that they are indirectly meant, this would be a technical phrase coined by us, and, to explain it, we should simply have to repeat the above relation of the attributes to what is really meant. We might as well say that the whole was *seriously* meant and its elements *playfully*, and then explain our technical phrase *playfully* by the above method. John, then, in the given sentence denotes a subject (i.e. a particular subject) as having attributes; for in the ordinary use of language denote is equi-

valent to mean and denotation to meaning. Thus the words *denote* and *denotation* are the only ones wanted, for all that is meant is that the thing to which the proper name applies is denoted by the name. To use the clock as an illustration. *This clock* would never be said in any sense to mean its pendulum, whether indirectly or secondarily.

§ 191. The use of *imply* and *implication* will be found equally fallacious in application to a subject and its attributes, whether the opposition is between implication and meaning, or implication and direct meaning. We might say, in the ordinary use of language, that 'he remarked "there 's the door" ' had, besides its strict meaning, the *implication* that I was to go. But this is merely the distinction between the ordinary meaning of the phrase and its meaning in a particular context. It is just as much meaning in the one case as the other. Clearly such a distinction is not here relevant; we should never call parts of the thing actually meant, or elements of it, implications, the thing itself being meant quite directly as having the parts. When we call a thing a clock, we do not mean (or mean directly) something by clock, whereas we only imply that it has wheels; we mean quite directly that it has wheels, for the word clock does necessarily mean a machine with wheels. As before, if we persist in saying that the attributes are implied in the name of the subject, are its implications, not its meaning, we shall be departing from linguistic usage and giving implication an artificial sense, to be explained necessarily as an arbitrary usage. Indeed we shall have to explain our use of implication by the very distinction we propose to elucidate by it. This would be entirely nugatory, and we had better coin a new word altogether. It will, at all events, be admitted that meaning and direct meaning are complete, in the ordinary and natural use, without the addition of implication, whether the latter be used to explain a sentence like the above, ending 'there's the door', or to mean the consequences necessitated by what is (directly) meant. In the case we are studying, the subject is meant as having the attributes; the meaning then is quite impossible without the so-called implication. Even if we allow such a distinction as that between directly, or explicitly, mean and imply, we cannot say that when a word means a whole which is a unity

of elements and *as* a unity of these elements, it implies these elements; that which is an explicit element in what is directly or explicitly meant cannot be an implication in any intelligible sense.

§ 192. We will next consider words like *heaviness*, as when we speak of 'the heaviness of this stone', or say that 'heaviness is due to attractive force'. In a given sentence 'this heaviness' certainly refers to the heaviness of a particular subject as such, but does it *mean* it as such? This heaviness, when fully expressed is equivalent to 'the heaviness of this body' and, to be understood at all, must be so interpreted. The expression therefore means or denotes the particular attribute of a particular body and as its attribute. The belonging to a particular subject is a part or element in what is denoted, or explicitly and directly meant, an element therefore in the denotation. The given expression, this heaviness, does not mean the particular subject; that is not a part of what is meant by this heaviness, but the words 'this body', which mean the subject, are a part of the compound verbal expression, when fully set out, 'the heaviness of this body'. Consider now the sentence 'the heaviness of this piece of glass is remarkable'. Here the heaviness may seem to mean a particular instance of heaviness, but that is scarcely a correct interpretation. *This* heaviness conveys meaning at once, but if we merely say *the* heaviness, and no more, we cannot mean anything It is as if we only half pronounced a word; if we complete the utterance we know what is meant. We must supplement our incomplete words, then, by an addition like 'of this piece of glass'. The heaviness of this piece of glass, then, means a particular instance of heaviness, whereas heaviness denotes and signifies the universal of the given attribute. A similar account may be given of 'the heaviness' in the sentence 'the heaviness of gold is one of its remarkable properties'; here 'the heaviness' refers to a universal and the compound expression refers to the particular attribute of a particular subject; we are referring to a universal, but to a species of the universal, 'such heaviness as this'. 'The heaviness' then is a word-form which is part of a complete word-form meaning either the particular heaviness of a particular body or a particular kind of heaviness, according to the words

by which 'the heaviness' is supplemented. Apart from some sentence in which it occurs, we cannot assign any meaning whether of subject or attribute to the word-form.

Consider finally a statement about heaviness in general; for instance, 'heaviness is due to attractive force'. It might be argued that we here have abstracted all consideration of the particular subjects which are heavy. If 'heaviness', then, meant or denoted these subjects, such abstraction would be impossible. Wishing, then, to make a statement about the attribute and not about the nature of the subjects of it (except that they can have the attribute), we use a word which means the attribute and does not mean the particular subjects. If it did mean these subjects we could not, in using it, make abstraction of them. But though we can in this sense make abstraction of the subjects, we cannot make abstraction of the fact that the attribute belongs to subjects. This therefore is not abstracted in our thought of heaviness but must be explicitly present.

An attribute is an attribute of a subject. Heaviness is the universal of an attribute of subjects; how then is its meaning related to these subjects? In such a sentence as 'heaviness is due to attractive force', the abstract noun denotes or means the universal of an attribute, as having a certain quality, and as the universal of an attribute of subjects or as an element in a unity and as being necessarily such This reference to its subjects therefore belongs essentially to the denotation of it. So in 'the heaviness of this piece of glass', the word which means a particular attribute must mean or denote it as belonging to a subject. The meaning or denotation is impossible without the reference. This reference, then, does not take us beyond the denotation; it is entirely within the denotation.

Clearly, then, it would be nonsense to say that the subject is *indirectly* meant or implied. No one would naturally say that the expression 'the weight of this body' *implied* this body, any more than he would say that 'yonder cage with a canary in it' implied the canary. If he were pressed to say whether the expression implied the canary, he would say, 'no, the canary is directly mentioned'. If then it were pointed out that the whole expression did not mean the canary, he might be puzzled and induced to say that it was after all implied, supposing

vaguely that anything which an expression did not mean, but referred to or presupposed, must be implied, as the only alternative to *mean*. He might, however, give what seems the correct answer, that part of the expression, though not the whole, does mean the canary, and that therefore the canary is *not* implied. In fact, if we employ the technical word 'imply', we shall have to repeat the explanation which has already been given of the meaning of 'this heaviness', 'the heaviness', or 'heaviness', in a given context. Again, if we allow the term 'direct meaning', the reference to a subject is as directly meant as anything else and, if we distinguish explicit somehow from implicit, the subject is quite explicitly meant in the sense of being an explicit element in what is explicitly meant.

§ 193. Our conclusion, then, is that the word which denotes or means the universal of an attribute or attributes of a certain kind must denote or mean a universal which as such contains the universal of such reference to a subject as an explicit element in itself. This reference is essential to the denotation, meaning, or significance, and cannot be separated from it. We leave nothing out when we say that the word heaviness denotes the universal of the attribute or the attribute universal. The denotation would be indeed nothing without the reference aforesaid. It belongs to the denotation as much as anything else does, certainly as much as what we may call the quality of the attribute denoted. There is then no need whatsoever for a word differing in sense from denote or denotation. We see, moreover, that the denotation, meaning, or significance of these abstract nouns cannot possibly be elucidated in the usual manner, that is, without reference to their use in sentences, and this, it may be added, applies to all the words about which logicians use this language of denotation and connotation. It is a question of word-forms which is before us and of the use of these word-forms in the sentences of normal speech.

§ 194. This becomes still more evident in the discussion of the question so far as it concerns adjectives. An adjective like heavy clearly has something to do with the attribute heaviness and with the heavy things which are the subjects of that attribute. By the theorists we are criticizing, heavy is said to *denote* heavy things, the subjects of the attribute heaviness, and

to *connote* this attribute itself. Now first it is clear that heavy does *not* denote heavy things, the verbal expression which does that is just 'heavy things'. Heavy does not denote any subjects. As then what is to be denoted or connoted is either subject or attribute, does heavy denote the attribute 'heaviness'? Heavy can only refer to heavy things through their heaviness, so that surely heaviness should be the denotation of heavy. But clearly the adjective, heavy, does not denote the attribute, the substantive 'heaviness' does that. This is so obvious that the connotationists were driven into their theory that heavy denotes the subjects, the heavy things. But this it certainly does not. It denotes then neither subject nor attribute, and as denotation is either of subject or attribute in this theory it can have no denotation. We may say then that if heavy does not mean or denote any subject or attribute, and if meaning must be one or other of these, heavy can have no meaning at all. The conclusion should in fact be that since words like 'heavy' have no denotation, they have *a fortiori* no connotation. They can, at least, only have connotation, and since the only definite thing that is said about connotation is that it is implied meaning, or words to that effect, adjectives like 'heavy' would be words not with direct but only with implied and secondary meanings.

§ 195. Now clearly a word must mean something, and we have therefore to consider what we mean by meaning. Ordinarily, to say that a word A has a meaning is the same as to say that the word A means something or that A means B. Of what then can we say that 'heavy' means *this*? It might be answered that 'heavy' means 'having heaviness', but that would of course involve a confusion with another sense of meaning. One form of words is often said to mean another, when the other is a verbal equivalent. Thus 'discomfort' *means* uneasiness, and *arbor* in Latin means tree. But the thing meant, which we are concerned with here, is the thing which the word symbolizes. 'Discomfort' is not the symbol of the word 'uneasiness'. *Heavy* is only the adjectival form which is the word equivalent of the participial form 'having heaviness'. It does not, of course, mean the objective fact symbolized by the noun form '(the) having heaviness'.

§ 196. The right and only method then is to inquire what is the use of the word 'heavy' in a sentence. The obvious answer is that the word 'heavy' is the word-form (adjectival) which we use in a sentence when we desire to state that a given specified individual subject has a given attribute, or when we want to represent, in general, such a subject as having the attribute. The first we do by taking the noun which means the particular subject as nominative to *is* or some similar word, and adding after it the adjective 'heavy', 'this piece of glass is heavy'. The second we do by representing in the sentence a subject as having the attribute, though not stating that it has it, by adding the attribute adjective to the noun without a verb, as 'this heavy piece of glass has fallen'. This we might express in a kind of shorthand by saying that the adjective is the word-form for the attachment of the attribute to the subject. The word-form, the adjective, is then necessarily relative in its use to an expression in words which has meaning, in the sense that it is an integral part of such expression in words. The expression in words contains a noun which means a subject of the attributes to which the attributive refers in one or other of the manners already described. In the first case 'this piece of glass is heavy', the expression 'is heavy' of which 'heavy' is an integral part, cannot accurately be said to mean the subject possessing the property, for an expression having that meaning could not contain the verb. What it normally means is that some one thinks that the particular subject has the particular property. In the other case, 'this heavy piece of glass has fallen', the expression of which the adjective is an integral part has meaning, and it means a particular subject having the attribute heaviness. The relation of the meaning of this expression itself to subject and attribute, which is our general problem, is given directly by this account of it.[1]

§ 197. We can now state the grammatical function of the

[1] We are not here concerned to elucidate all the grammatical forms, though the subject under discussion can only so be completed, we note, however, that the verb with the adjective does not mean the object to which it relates. In 'this can leaks', *leaks* does not mean 'the leaking of the can', but these last words themselves mean that. The verb in the sentence means that the object to which it refers is taken to exist. See further on this subject § 76

abstract noun ***heaviness*** and distinguish it from the function of the adjective ***heavy***. When we wish to name a particular subject which has an attribute or to state that it has that attribute, we use the adjective along with the noun; when we wish not to state that a given attribute is found in a given subject, but to consider the attribute without considering the nature of the particular subject to which it belongs, or rather without considering what particular subjects it belongs to, and to state something about that attribute itself, and not about the particular subject it belongs to, we use the abstract noun corresponding to the given attribute, because it has the meaning above described. We then make it, by suitable linguistic devices, the subject in the *logical* sense of subject We can of course use artificial forms of expression and say 'heaviness is in this piece of glass', or 'this piece of glass has heaviness', but the normal and proper expression is 'this piece of glass is heavy'. Again, 'this heavy piece of glass has fallen' is the normal usage and not some artificial substitute like 'this piece of glass which has heaviness has fallen'.[1]

§ 198. Consider next such concrete general terms as 'tree'. The word ***tree*** does not mean some particular tree or trees and therefore does not mean subjects, nor does it mean any attribute. Thus *tree* denotes neither subject nor attribute Nor again does it denote the universal of a subject, for it does not denote treeness, nor the universal of any attribute, nor of all the attributes, of a tree. Thus, from the point of view about meaning already criticized, tree has no meaning and no denotation In sentences it is used with the definite or indefinite article or with some word like 'this'. With the indefinite article 'a tree' may mean a particular tree, as in 'a tree stood near the house'. This meaning, however, it often has only as qualified by some other words, e.g. 'a tree which had been marked for cutting down'. Here 'a tree' means a particular subject as having attributes, and the same account of it in respect of denotation may be given as we have already given for proper names. With a qualifying adjective, e.g. 'an elm tree', 'a tree' may stand for any tree of a certain class of trees. Again in such a sentence as 'a tree gets nourishment partly from the air', '*a* tree' stands for *any*

[1] On these artificial forms see § 82.

tree. In the former case, when 'a tree' stands for a given particular tree, we observe that the word 'tree', not itself meaning the particular subject, is part of a compound expression 'a tree' which does mean a particular subject.

In the second case we have something stated about all trees. Here '*a* tree' does not denote a given particular tree, for then the proposition would be true of that tree only, nor does it denote tree universal. For 'treeness', the universal, does not get nourishment Nor does 'a tree' mean or denote 'all trees'; for a word meaning all trees should either be followed by a plural verb or, if followed by a singular, should mean all trees as an organized group, and only as such. But it is not meant that trees as a group get nourishment, but that each tree separately does. Nor can we say that '*a* tree' here denotes *any* tree, though it is the equivalent in words of 'any tree'. For, if it denoted any tree, it would denote this one which I have in front of me now, and, if it denoted that tree, it would denote no other. The article is indefinite, so that no particular tree is named or specified, and the statement is understood not to depend on the particularity or peculiarity of any given tree. Thus the statement is equivalent to a statement about a universal. We must indeed recognize that we have here to do with a special idiom, a linguistic device for representing a universal statement by one that is singular in form and is constructed exactly as if *a tree* meant or denoted a given particular tree.

§ 199. These considerations show that the ordinary logic manuals (perhaps all treatises of logic) have been written without the nature of the problem, which is approached with the formula of denotation and connotation, being in the least realized. There is no sign of a sense that the problem requires careful and detailed analysis, and in consequence the writers are unable to say anything which is not hopelessly confused of the denotation and the connotation (as they are pleased to call it) of a word like *animal* or *tree*. We cannot really ask what a noun or adjective denotes, or whether a noun denotes a subject or an attribute, without going into grammatical details. Indeed the whole investigation seems properly to belong to grammar, not to logic, and the need of it is seen in grammar in the definitions given of the 'parts of speech'. Certainly it doesn't seem

to belong to logic as logic, nor is any use or any application made of it in the rest of what is called logic. For what we account the main problems of logic it is clearly of no use whatever. It does not, however, follow that it is not important to the logician to investigate and understand the use of grammatical forms. He deals with thought through its expression.

§ 200. There is another way of putting this distinction between denotation and connotation or of applying it. This way, which has not necessarily for its basis the distinction of subject and attribute, is that in which the distinction is most often met with perhaps in ordinary philosophic discussions. The members of a class are said to be denoted by something or other, and that in virtue of which they are members of the said class, their common characteristic, is said to be connoted by the same something. This common characteristic may be an attribute, as 'heaviness', but it may be something which covers the whole nature of the particular, as blue or blueness covers the whole nature of this blue colour. Here it is not natural to call blue or blueness an attribute of the blue colour. It would probably be called the 'quality' of the particulars. In any case the common characteristic is a universal, and the universal, whether quality or attribute, is apparently what is supposed to be connoted and its particulars denoted.

§ 201. What then is it that connotes the universal of a class and denotes its particulars? Sometimes it would be said that the 'concept' had connotation and denotation, and sometimes the 'term'. Under the confusion which attaches to the word 'concept', it seems at least that those who use it mean by it some sort of thought. If then denotation and denote had the meaning they have in ordinary language, a concept could not possibly denote anything. Many writers indeed speak of a 'universal concept' and not of a 'universal', and treat the universal as if it were necessarily a concept. If then the universal is what is connoted, it would be the universal concept which is connoted, not the universal concept which connotes. According to the traditional phraseology, however, the right expression seems to be the denotation and connotation of *terms*, that is, of certain words. We have here to do with words, in fact, not with thoughts. But what term connotes the universal

and denotes the particular? Is it the noun 'heaviness' or the adjective 'heavy'? Is it the noun blue (that is, blueness), or the adjective 'blue', as in the sentence 'this colour is blue'? Is it, in the class of trees, the noun 'treeness' (an artificial term) or the word 'tree', which is treated always as a noun and called a concrete general name?

Now 'denote' and 'connote' are either technical terms, whose meaning is not to be interpreted from the ordinary meaning of *denote* at all, or else denote means here what it does in ordinary usage. The former hypothesis seems ridiculous enough; for, if we adopt it, it is absurd to employ a word 'denote', which already has a significance, with no reference to its accepted significance. The second hypothesis then is the natural one, and though we can say nothing about the meaning of 'connote', we can use the meaning of 'denote' to answer the question before us. 'Blueness' does not denote the particular blue before us but the common quality of all blues, and so for 'treeness', 'animalness', &c. Further, since to connote is at least *not* to denote, and 'blueness' and 'heaviness' denote the universal quality or attribute, they cannot connote this universal. Therefore on both grounds it cannot be 'blueness' which denotes this blue colour and that blue colour, and connotes the blue of them. 'Heaviness' cannot connote weight and denote the heavy things. 'Blueness' does not denote the blue colours; if any word can denote them, it would be just the compound word-form 'blue colour'. Again, *heavy* does not denote heavy things nor a particular heavy thing, as we saw. Thus the only nouns and adjectives which, according to the theory, come into question, cannot denote the individuals of a class. It looks as though those who use this phraseology (applying it without thinking about it or discussing the distinction) think of heavy things as the denotation of 'heaviness', so that the connotation of 'heaviness' would just be the universal it means, that is, what it *denotes*; the difficulty is, however, concealed by some other verbal account of the meaning of 'heaviness', by saying, for instance, that 'plantness' connotes 'life and growth'. This, however, is an impossible use of 'denote', for we have seen that 'heaviness' does *not* denote heavy things.

§ 202. On the other hand, Mill makes the words which denote

and connote, the adjectives 'blue', 'heavy', &c., and the common terms, 'plant', 'animal', and 'man'. Here what Mill really means by the *denotation* of heaviness is simply the particulars of the *universal* heaviness, which are designated by an utterly false and anyhow useless technical terminology, for they are *not* the denotation of the word 'heaviness'. His use of connotation is simply a perverse and falsely phrased way of saying that the word 'heavy' is attached by the word 'is' to each heavy object referred to; the words meaning the heavy objects being nominative to the verb 'is', which verb is followed in the sentence by the adjective 'heavy' because of the common quality 'heaviness', or to indicate that they have the common quality heaviness. In either case, if we take 'denote' as having the only meaning it can properly have, there is no word at all which has the individuals of the class for its denotation; no word, that is, of the only nouns and adjectives which are supposed to come into the question. Whatever, then, connotation may be, the distinction is an absurdity since the proposed application of denotation cannot be made to the words in question.

§ 203. The distinction then can be maintained only by adopting the former hypothesis and by making *denote* and *denotation* have a meaning which is *not* the meaning of these words in ordinary speech. But, then, what can the words mean? We can only guess from the instances given. The denotation of the term *heaviness* would mean the particulars of the universal which the term 'heaviness' means or denotes. Clearly the terminology is not of the slightest use. The connotation of the term *heaviness* would be just the universal which it means or denotes. It would be as useful and instructive to call the one abra and the other cadabra. In the case of adjectives the denotation of *heavy* would be the particular heavy things, to the words really denoting which the adjective is connected in a sentence by the word 'is' in order to state that they have the attribute heaviness, and thus the connotation of 'heavy' would be universal 'heaviness' (and similarly when the universal is not an attribute, but a quality in the sense explained). A little more sense might perhaps be got into the terminology by interpreting it to mean that 'heavy' is *technically* said to denote heavy

things, because it is part of a word-phrase which does denote these subjects.

§ 204. It is waste of time to ask, on this view, whether a proper name has a connotation, for the distinction could apply only to an adjective or a common term. Obviously we could not repeat the above formulae for the proper name, which therefore could have neither denotation nor connotation. The same holds of the first case. Observe further that this can be a matter of dispute only because the disputants are not really agreed on the definition of these terms. The problem therefore is not how the terms should be applied in a particular case, but whether the distinction is a legitimate one at all.

§ 205. An explanation of the interest taken in the question whether a proper name has a connotation may be hazarded. The question is perhaps confused in practice with a real and important question of which it is a mere parody. This is the question whether the apprehension of a particular involves anyhow the apprehension of the corresponding universal. The question we have been examining is solely a question as to what a word, or group of words, actually does mean. 'This house,' for instance, does mean the particular as an instance of the universal because of the general term 'house'; the form of the expression shows this. Thus if what is to be connoted is thought of as a universal, those who ask whether a proper name has connotation are asking whether we can think of the person John save as a particular of a universal. But the true question (since particularity is distinguished from universality) is whether the name itself means the reference to the universal or whether the meaning of the name includes this reference, e.g. if a dog's name is 'Shot'.[a]

§ 206.[b] The meaning of *connotatio* in medieval logic is an important point which some modern interpreters, I suspect, have missed and so have got into confusion. In the first place it is enough for the purpose to note the general meaning of *supponere*.

[[a] I think the dog's name was intended to be significant apart from its denotation. My own dog's name, 'Shot', is substituted as preferable in this connexion to Wilson's Cf. p. 203.

[b] §§ 206–7. Redrafted from a letter, 9.ii.06, to C. Cannan and from Wilson's manuscript (Discussions, No. 1). Cf. *An Introduction to Logic*,[1] H. W. B. Joseph, pp. 140–2.]

If A and B are so related that we can say 'this A is B', then B is said *supponere pro* A. 'Quandoque concretum aliquam rem significat, vel connotat, sive importat, sive dat intelligere, pro qua etiam supponit, quam abstractum nullo modo significat nec aliquo modo supponit pro eadem ut "iustus" et "iustitia" et similia, nam iustus vere supponit pro homine quando dicitur Iustus est virtuosus, non enim potest supponere pro iustitia. . . . Iustitia supponit pro qualitate et non pro homine.'[1] The idea of connotation is ultimately based upon the distinction of substance (not mere *subject*) and attribute. The correlative of a connotative term is an absolute term. An absolute term,[2] or a merely absolute term, is one which has a primary meaning (significat primo, primario, principaliter) and no secondary meaning (really the name of a substance as the fuller context in Ockham seems to show). A connotative term is one which has both a primary and a secondary meaning (secundario), such as *album* (also *intellectus*, *potentia*, &c). Observe that he gives this as what the scholastics frequently employ. This is elucidated by a passage from Albertus de Saxonia, an Ockhamist,[3] and one from Pierre d'Ailly,[4] who is in general agreement with Ockham, but it is sufficiently elucidated by the fuller context of Ockham.[5] D'Ailly's words show that pro quo supponit *albus* is the white substance, e.g. this man. The double meaning of *albus* depends on its reference of an attribute to a substance, and the two meanings are the substance and the attribute. One would naturally suppose that the *primary* meaning of album was albedo (whiteness) (album is in one place said clearly to signify or mean albedo), and the secondary the white object, but the words of Albert suggest that it was just the other way, viz. that *albus* means primarily id pro quo supponit, that is, homo, or

[1] Ockham, *Summa totius logicae* (Oxford, 1675), Pars I, cap 5, p 9 Quoted in part by Prantl, *Geschichte der Logik im Abendlande*, III, p 363, n. 827.

[2] Ockham (Prantl, l c, iii, p 364, note 831), *Summa*, Pars I, cap x, ad init quae non significant aliquid principaliter et aliud vel idem secundario

[3] Prantl, IV, p 62, n 232, where Albert is not discussing connotation.

[4] Petrus de Ayllıaco (or de Alyaco), Prantl, IV, p 109, n 459

[5] Ockham, l. c., Pars Prima, cap x, pp 21 and 22 (cf. Prantl, III, p. 364, n. 831). Though Ockham speaks of the distinction as common with the Scholastics, Prantl knows nothing earlier than the passage he quotes from Duns Scotus, *Qu. sup An. pr* I. 16 (Prantl, III, p. 134, n 598) and quotes nothing between Duns Scotus (ob. 1308) and Ockham (ob. 1347).

hic homo, because you can say correctly hic homo *est* albus; thus the white substance is its primary meaning. Its secondary meaning is whiteness, connotat aliquid quod non est de essentia significati per subiectum, ut 'homo est albus'; . . . 'homo est rationalis' . . . 'rationale' connotat formam substantialem hominis.

The two passages do not, as a matter of fact, introduce primario and secundario, but taken with the passages from Ockham naturally seem to imply the above interpretation.

But it must be observed that, for a reason which will appear immediately, the fact that the attribute is said to be connoted does not prove that it was the secondary meaning. The full context of Ockham throws no light on the question which was primary and which secondary.

Now besides the adjectives albus, iustus, the nouns albedo, iustitia are connotative, and for the same reason.[1] The question therefore arises: What is the primary and what the secondary meaning of albedo and iustitia which is connoted; and what is that pro quo supponit such an abstract term? The answer is to be got from two very important passages in Ockham.[2] The abstract term 'whiteness' 'supponit' for a quality or attribute (qualitas accidens vel forma) in the concrete thing. You can say, that is, this quality in this body, or this colour in this body, is whiteness; whereas album 'supponit' for the thing (hoc corpus). E converso, as he says, an abstract term like 'ignis' *supponit* for the substance, a particular fire, presumably.[3] Also a concrete may *supponere* for a part of the whole substance. The example given is that anima is a part of man, and supponit pro parte eius; homo est animatus et ita animatum supponit pro homine toto. The two meanings which make albedo connotative (like albus) are the white thing and its white colour (aliquid habens albedinem and albedo). The question as to which is connoted implies a mistake. In the nature of the case it is possible that,

[1] Other instances in Prantl, III, p. 364, n 831, potentia, actus, intellectus.

[2] Prantl, III, p. 363, ns. 826 and 827.

[3] Ignis is thus called abstract both in the letter to C. Cannan and in Wilson's MS. notes. He is referring to a passage not in Prantl (III, p. 363, n. 827) 'nam ignis supponit pro subjecto, et igneus quod est concretum supponit pro forma vel accidente eiusdem. Dicimus enim quod calor est igneus, et non ignis' (an adjective stated not of the subject but of part of it). Ockham, *Summa*, Pars I, cap. v, p. 9.

since the term combines the two meanings, *each* of these should be said to be connoted. This was the actual fact. This is proved quite clearly by two passages, one from Ockham's *Quotlibeta*,[1] and one the passage beginning 'quandoque' quoted above.[2] The latter means that album connotes the white thing, and we see from the other passage that it also connotes whiteness.

This throws light on what would otherwise be a difficult statement in Thomas of Strasburg,[3] Scientia connotat respectum ad scibile . . . et ideo non obstante illa connotatione, qua cernit respectum ad scibile. . . . Thomas is thinking of science not as an attribute of the man who knows but of the scitum; scientia alicuius, like quantitas alicuius, is connotative. This is quite in agreement with Ockham. Scientia refers, like all connotative words, to a subject and an accident or attribute of it, and connotes the subject just as whiteness does. It also connotes the attribute. We may compare Ockham's account of intellectus as a nomen connotativum. He gives[4] these kinds of connotative terms:

(1) all nomina concreta primo modo dicta;
(2) nomina relativa, e g. *simile*;
(3) pertinentia ad genus quantitatis;
⟨(4) unum, bonum, intellectus, &c⟩

Thus, for connotative words, their significare = connotare, and the answer to the question, whether the attribute or the subject is connoted, is that both are connoted. There appears no trace of the clumsy modern distinction of denotation from connotation in medieval logic, though there is possibly something like it in Thomas of Strasburg:[5]

'Sic potentia generativa simpliciter et *principaliter* dicit divinam essentiam, quamvis connotet respectum ad genitum, puta paternam proprietatem, qua connotatione non obstante, *simpliciter loquendo*, potentia generandi debet dici essentia divina, sive res absoluta et non relatio, nec debet dici essentia et relatio, sed magis essentia sub relatione.'

[1] Prantl, iii, p. 363, n. 826
[2] Supra, p 405
[3] Prantl, iv, p. 5, n 17.
[4] Cap x (Oxford ed.), p 22, 9 lines up Cf Prantl, iii, p 364, n. 831.
[5] Thomas ab Argentina, *Comm. in IV libros sent* Genua 1585, Lib. I, Dist. VII. Qu. 1. Art 1 Concl 3, fol. 49 v, after the important passage quoted in Prantl, iv, p. 5, n. 17.

The passage is not quite clear, but it seems to show that the primary meaning of potentia (which is a connotative word according to Ockham, or would be with some thinkers according to Ockham) was the quality in the divine substance, just as scientia is said, simpliciter loquendo, to be a qualitas absoluta. There is therefore a complication introduced, for, in the case of scientia, we have besides the proper 'subject' of it, the mind, the 'object' of it, the thing known. The first two elements of meaning are all we have had hitherto in reference to connotation. The new element in Thomas doesn't seem to have occurred to Ockham as connotatum, and thus the last passage is not so valuable as if he had said: Scientia connotat respectum ad animam, and, potentia generativa connotat respectum ad generantem. It must further be noticed that Thomas is not talking specially of this subject of connotation; his remark is incidental. One thing we certainly do get out of the passage is that he called the 'attribute signified' itself the primary meaning of the abstract noun corresponding. This confirms the view adopted above.

§ 207. But the question remains as to which of the meanings was primary and whether the same meaning was primary for both abstract and concrete attributive terms. These logicians would be likely to get into difficulties here, for they do not appreciate the fact that they are dealing with forms of linguistic expression, which are distinguished by the kind of purpose they serve in a sentence. The grammatical form of the adjective *albus* referring it to the subject homo (habens albedinem = albus) might well lead to homo as the primario significatum, and the passages quoted seem rather to favour this view. But the noun substantive *albedo* would cause a difficulty, for it would seem unnatural to say that whiteness meant primarily the white object. This feeling seems to be betrayed by Thomas of Strasburg in the passage partly quoted above. It runs thus: 'Scientia connotat respectum ad scibile, quamvis *ipsa* sit in prima specie *qualitatis*. . . . Scientia enim non dicit qualitatem, et relationem, sed dicit qualitatem sub relatione: et ideo, non obstante *illa connotatione*, qua cernit respectum ad scibile: *ipsa* tamen simpliciter loquendo dicitur qualitas absoluta.'[1] Ipsa would natur-

[1] It immediately precedes 'sic potentia', &c., p. 407, above.

ally designate a primary meaning, not a secondary, and the obvious tendency of such a passage would be to make the quality or attribute the primary meaning of *albedo* and the white object or, as Thomas, probably moved by a scruple, says, the reference to the white object the secondary meaning. The resulting theory that the primary meaning of abstract attributives is the attributes is really not inconsistent with the view that the primary meaning of concrete attributives is the subject. On the contrary there would be the same principle in both, viz. that the primary meaning is id pro quo supponit, for, according to Ockham, the concrete supponit pro the *subject* and the abstract, also according to him, supponit pro the attribute. Whether the view represented in Thomas was Ockham's, or whether Ockham formulated any view on the subject of the primary meaning of *albedo*, I cannot say, but there is a passage in Ockham which shows a strong tendency in the direction of Thomas's view. He says, 'Aliqua sunt concreta et abstracta, quae sic se habent, quod concretum significat aliquam rem et supponit pro illa, quam *nullo modo abstractum* significat nec pro illa supponit: exemplum est de justo et justitia.'[1] In the passage already quoted,[2] where he adds what it is that forms the pro quo supponit of the abstractum, he uses exactly the same language. The words *nullo modo* significat go, however, rather further and are not compatible with making the subject or substance the secondary meaning (i.e. significat secundario). However, with him there must be two meanings for *albedo*, for it must be connotative like quantitas, potentia, actus, and justitia. If he thought it out at all he might therefore have taken for the secondary meaning, not the subject, but the reference to the subject, which is exactly Thomas's formula.

Since the 'pro quo supponit' of a given predicate is connected with the predicate by the verb est (hic homo est albus: hic homo est homo habens albedinem), which seems to identify the subject and the predicate, it is more natural that the pro quo supponit should be made the primary meaning.

[1] Prantl, III, p. 363, n. 826, from Quotl. v. qu. 9.

[2] Supra, p. 405, line 2.

END OF VOLUME I