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An Outline of Philosophy

Bertrand Russell

With an introduction by John G. Slater



London and New York

This edition first published in 1927
by George Allen & Unwin Ltd, London

First published in Routledge Classics 2009
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
270 Madison Ave, New York, NY 10016

Routledge is an imprint of the Taylor & Francis Group, an informa business

This edition published in the Taylor & Francis e-Library, 2008.

To purchase your own copy of this or any of Taylor & Francis or Routledge's collection of thousands of eBooks please go to
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British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data

Russell, Bertrand, 1872–1970.

An outline of philosophy / Bertrand Russell.

p. cm. – (Routledge Classics)

Originally published: London : George Allen & Unwin, 1927.

Includes index.

1. Philosophy. I. Title.

B1649.R9309 2009

100—dc22

2008052491

ISBN13: 978-1-134-02747-7 ePub ISBN

ISBN10: 0-415-47345-4 (pbk)

ISBN10: 0-203-87546-X (ebk)

ISBN13: 978-0-415-47345-3 (pbk)

ISBN13: 978-0-203-87546-9 (ebk)

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INTRODUCTION

Russell wrote *An Outline of Philosophy* (*Philosophy* in the USA) between 1 April and 1 July 1927. The idea for the book originated with W. W. Norton, an American publisher who was eager to add Russell to his stable of authors. To advance his case, Norton wrote to Stanley Unwin, who had been Russell's principal British publisher ever since he dared to publish Russell's controversial book, *Principles of Social Reconstruction* (*Why Men Fight* in the USA) in 1916, after other publishers had turned it down because of Russell's anti-war activities; in his letter, dated 19 July 1926, Norton sought to persuade Unwin that Russell would be better served by a single American publisher instead of the many he then had. At that time Russell had books with half a dozen American publishers. In addition to offering to work hard to sell his books, Norton made him a very attractive offer for his next one: 'If Mr. Russell has any general work in philosophy which he is considering or possibly has in preparation, we should be very glad to guarantee him the sum of \$5,000.00 as royalties, and we should be willing to make a substantial advance against this sum.' Unwin, who found Norton's argument for a single American publisher convincing, communicated the proposal to Russell on 29 July. Russell responded two days later; he was prepared to accept Norton's offer if Unwin was satisfied with the financial arrangement. He went on to say that he was in the process of finishing the first draft of *The Analysis of Matter*, which he had placed with Kegan Paul (a very sore point with Unwin), and planned to complete the revision of it at Christmas-time. 'When this book is off my mind, I should like to do a book treating of philosophy in general. It is not clear to me how "popular" he wants me to be; does he want the book to be easier than *The Analysis of Mind*?'

Russell was not involved in the negotiations again until the autumn. Unwin, who functioned as his literary agent, had meanwhile settled the finances with Norton. On 14 October Russell told Unwin that he could write the book during the summer of 1927 with delivery in September. This quick schedule was possible because Russell was just then starting his delivery of a course of twenty lectures on 'Mind and Matter', under the auspices of the new British Institute for Philosophical Studies; during the previous year he had offered a similar course on the 'Problems of Philosophy' for the same Institute. 'The lectures that I am giving', he wrote to Unwin, 'would form a framework for the book, but the whole would have to be written out afresh.' The syllabuses for these lecture courses have been published in Appendix III of *Essays on Language, Mind and Matter, 1919–1926*, which is Volume 9 of *The Collected Papers of Bertrand Russell*. The finished book does not follow either syllabus, although nearly all of the topics covered in his lectures are discussed in the book. The fact that he had so recently developed these courses makes it clear why he so quickly agreed to Norton's proposal for a general book in philosophy. Russell was always ready to rework such popular material if it increased his income.

On 22 October 1926 Unwin sent Russell a signed contract for the book, specifying that a manuscript of about 100,000 words was to be delivered to him on or before 31 October 1927. Russell was to receive an advance against royalties of £200 – about one-fifth of Norton's guarantee. Unwin, who was still smarting over Russell's failure to offer him *The Analysis of Matter*, was happy to have a new Russell title for his 1927 list. Even though the contract had been signed, there was still a question about the level at which the book should be pitched. Russell broached this question in a letter to Unwin on 17 November:

Would you mind giving me your idea as to its scope? Should it attempt to deal popularly with all philosophy, or with the problem of Mind and Matter? Should the level of popularity be that of *The Problems of Philosophy* (Home University Library), or that of *Our*

~~Knowledge of the External World, or that of *The Analysis of Mind*? I want to be thinking it over during the winter, though I can't begin writing till April.~~

I should myself prefer *Mind and Matter*. Have you any views as to title?

Unwin advised him that the American market would prefer a book which dealt popularly with all of philosophy, and which was no more demanding on the general reader than *The Problems of Philosophy*. Personally, he would choose 'the book that you yourself preferred to write, because the more you enjoyed writing it the more people would enjoy reading it', but he doubted that such a book would prove popular enough for the United States market.

By the end of March 1927 Norton was becoming edgy by Russell's failure to supply him with any information about the proposed book, so he wrote to Unwin to urge him to remind Russell of his contractual obligations. Norton complained that they did not even have a title for advertising purposes, and stated that he would be satisfied with *Philosophy*, since books with titles of one word sold very well in America. About a week later Russell sent Unwin a short description of the book and a proposed table of contents, but he warned Unwin that the contents might be altered when he got down to writing the book. We gather that he proposed *An Outline of Philosophy* as the title: 'I don't care what title is chosen. If Mr. Norton wants *Philosophy*, well and good. But I slightly prefer the title I have suggested.' In a later letter he informed Unwin that he had met with Norton and they had agreed that the American edition should be called *Philosophy*. 'I gathered that in England you were going to stick to *An Outline of Philosophy* but I see the shorter title in your list of announcements. I don't care much either way, though, for England, I have a *slight* preference of the longer title. But it is not strong enough to outweigh any contrary feeling on your part.'

Russell presumably began writing the book shortly after he sent Unwin a description of it, for on 3 June he wrote to Unwin again: 'I am getting on faster than I expected with the *Outline of Philosophy* and hope to finish it by the end of this month, so that I can let you have it by July 15 about.' The book was finished well before the end of June, because on 2 July Russell told Unwin that he had three-quarters of the typescript in hand. 'I can certainly let you have the two typescripts of my book before July 9. I had hoped to be able to send them today but the typist has been slow.' While he was proof-reading it he had qualms about its suitability for the American market: 'I feel some anxiety lest the book should not satisfy Mr. Norton; he may think it not easy enough for his public. Will you please tell him that, if so, I can modify any parts that he objects to? Often more diffuseness is enough to make a book easy.' Two days later he sent Unwin the typescripts; he estimated its length at 105,000 words. Norton made no demands for alterations.

As has been noted, the scope of the book was determined by the perceived demands of the American reading public. Russell agreed to discuss a wide range of philosophical topics, including, and here his customary reluctance shows itself, those collectively called 'ethics'. In his opening paragraph to the chapter on ethics he gives the reader to understand that he is discussing the subject only because a treatment of it is expected in a book on philosophy generally. Even though he would have preferred to omit this chapter, he nevertheless used it to make two significant points. The first is to inform his readers that, partly due to Santayana's criticism, he has abandoned his earlier ethical position, which he had taken over from G. E. Moore. He no longer believed that *good* is a unique indefinable quality which some states of mind and some actions have and others lack. Actually, he had announced his rejection of the Moorish position, without crediting Santayana, in 1914, in 'Scientific Method in Philosophy' (included in *Mysticism and Logic*), where he made this startling statement: 'Ethics is in origin the art of recommending to others the sacrifices required for cooperation with oneself.' In that essay he did not develop an alternative theory. But given the nature of this book, he felt obliged to supply one, and the one he favours is emotivism. In this ethic 'good and bad are derivative from

desire' (184); he then goes on to offer a preliminary analysis of what is meant by this statement. Had Norton not wanted a general work in philosophy, it seems unlikely that Russell would have recorded his ideas about the emotive meaning of ethical terms, ideas which were developed by others into a full-blown rival to Moore's position.

But Norton's expressed desires determined the content of the book in a more significant way. In his original letter to Unwin he remarked that it was his 'conviction that Mr. Russell is the one scholar today who should undertake a revision of philosophy in terms of modern science'. Norton also mentioned that John B. Watson, the behaviourist psychologist, was one of his authors. Now Russell had, nearly a decade earlier, developed a great respect for Watson's work, because it seemed to open the way to analysing mental phenomena using only physical events as data, a goal which fit nicely with the direction of Russell's own thinking on the nature of mind. Early in 1919 Russell wrote to Watson to this effect. Unfortunately his letters to Watson seem not to have survived, although Watson's have. Watson's reply, on 21 February 1919, contains a remark that seems to have made a strong impression on Russell. Watson remarked that he was 'writing a book on objective psychology and a little later spelled out what he meant by this phrase: 'with no disrespect to philosophy at all, I am trying to get psychology just as far away from philosophy as are chemistry and physics – which of course is not so far as the average run of chemists and physicists think it is. I am hoping that when I succeed in getting out a systematic presentation the philosophers will take it up and show whether the system is possible.' This is just what Russell proceeds to do in *An Outline of Philosophy*.

A central theme of the book is to develop a behaviouristic definition of knowledge and then to apply it to various problems in an attempt to determine its limitations. As the reader will learn, Russell does uncover the point at which 'behaviourism as a final philosophy breaks down' (102). Introspection, which behaviourism rejects, is necessary, Russell argues, even in science. But although he finds behaviourism inadequate, he still thinks it valuable as a working hypothesis. Early in his discussion of truth and falsehood, he remarks that these predicates are supposed, by extension, to apply to beliefs, but 'let us first consider the truth and falsehood of statements, following our practice of going as far as we can with the behaviourists before falling back on introspection' (204).

The role played by behaviourism ('the new psychology' as the American blurb has it) in this book will hardly surprise those who are acquainted with Russell's philosophical development. From the time he read William James's *Essays in Radical Empiricism* in 1912 until he began work on *The Analysis of Mind* (1921) Russell thought about, but resisted accepting, James's contention that matter and mind were simply different organizations of the same basic stuff. James called it 'experience'; Russell, after adopting the Jamesian position in 1918, preferred 'events' as the designator of the neutral building blocks. Prior to espousing James's position, Russell had called his philosophy 'logical atomism', afterwards he shifted to the name 'neutral monism', perhaps because it had a more traditional ring about it. Neutral monism was, of course, not incompatible with logical atomism; indeed, Russell gradually developed the one out of the other. His earlier name for his philosophical position did strongly suggest the method of logical analysis, which remained, for the rest of his life, Russell's choice of method in philosophy. It is the method used in this book, and neutral monism, Russell informs us, is 'the view advocated in the present volume' (168).

This book is probably best known in philosophic circles as the place where Russell made his devastating judgment of Kant's place in philosophy. 'Kant has the reputation of being the greatest of modern philosophers, but to my mind he was a mere misfortune' (64). In his *Five Types of Ethical Theory* (1930), C. D. Broad questioned Russell's judgment of Kant's place in the philosophical pantheon on the ground that 'it seems a pity to apply to him an epithet which should obviously be reserved for Hegel' (10). At another place, and to the dismay of psychologists of all schools, Russell suggests that the design of many psychological experiments fails the test of objectivity: 'Animals

studied by Americans rush about frantically, with an incredible display of hustle and pep, and at last achieve the desired result by chance. Animals observed by Germans sit still and think, and at last evolve the solution out of their inner consciousness. To the plain man, such as the present writer, this situation is discouraging' (23). Russell's wry description of himself as 'the plain man' is delicious. Finally, he irritated nearly the whole corps of academic philosophers by asserting that our thoughts are in our heads (108ff.). As he later (in *Portraits from Memory*) mischievously put it: 'I horrified all the philosophers by saying that their thoughts were in their heads. With one voice they assured me that they had no thoughts in their heads whatever, but politeness forbids me to accept this assurance' (163). Russell loved to tweak the establishment's nose, and especially that of the philosophical establishment.

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PHILOSOPHIC DOUBTS

Perhaps it might be expected that I should begin with a definition of 'philosophy', but, rightly or wrongly, I do not propose to do so. The definition of 'philosophy' will vary according to the philosophy we adopt; all that we can say to begin with is that there are certain problems, which certain people find interesting, and which do not, at least at present, belong to any of the special sciences. These problems are all such as to raise doubts concerning what commonly passes for knowledge; and if the doubts are to be answered, it can only be by means of a special study, to which we give the name 'philosophy'. Therefore the first step in defining 'philosophy' is the indication of these problems and doubts, which is also the first step in the actual study of philosophy. There are some among the traditional problems of philosophy that do not seem to me to lend themselves to intellectual treatment because they transcend our cognitive powers; such problems I shall not deal with. There are others, however, as to which, even if a final solution is not possible at present, yet much can be done to show the direction in which a solution is to be sought, and the *kind* of solution that may in time prove possible.

Philosophy arises from an unusually obstinate attempt to arrive at real knowledge. What passes for knowledge in ordinary life suffers from three defects: it is cocksure, vague, and self-contradictory. The first step towards philosophy consists in becoming aware of these defects, not in order to rest content with a lazy scepticism, but in order to substitute an amended kind of knowledge which shall be tentative, precise, and self-consistent. There is of course another quality which we wish our knowledge to possess, namely, comprehensiveness: we wish the area of our knowledge to be as wide as possible. But this is the business of science rather than of philosophy. A man does not necessarily become a better philosopher through knowing more scientific facts; it is principles and methods and general conceptions that he should learn from science if philosophy is what interests him. The philosopher's work is, so to speak, at the second remove from crude fact. Science tries to collect facts into bundles by means of scientific laws; these laws, rather than the original facts, are the raw material of philosophy. Philosophy involves a criticism of scientific knowledge, not from a point of view ultimately different from that of science, but from a point of view less concerned with details and more concerned with the harmony of the whole body of special sciences.

The special sciences have all grown up by the use of notions derived from common sense, such as things and their qualities, space, time, and causation. Science itself has shown that none of these common-sense notions will quite serve for the explanation of the world; but it is hardly the province of any special science to undertake the necessary reconstruction of fundamentals. This must be the business of philosophy. I want to say, to begin with, that I believe it to be a business of very great importance. I believe that the philosophical errors in common-sense beliefs not only produce confusion in science, but also do harm in ethics and politics, in social institutions, and in the conduct of everyday life. It will be no part of my business, in this volume, to point out these practical effects of a bad philosophy: my business will be purely intellectual. But if I am right, the intellectual adventures which lie before us have effects in many directions which seem, at first sight, quite remote from our theme. The effect of our passions upon our beliefs forms a favourite subject of modern psychologists; but the converse effect, that of our beliefs upon our passions, also exists, though it is not such as an old-fashioned intellectualist psychology would have supposed. Although I shall not discuss it, we shall do well to bear it in mind, in order to realise that our discussions may have bearings upon matters lying outside the sphere of pure intellect.

I mentioned a moment ago three defects in common beliefs, namely, that they are cocksure, vague and self-contradictory. It is the business of philosophy to correct these defects so far as it can, without throwing over knowledge altogether. To be a good philosopher, a man must have a strong desire to know, combined with great caution in believing that he knows; he must also have logical acumen and the habit of exact thinking. All these, of course, are a matter of degree. Vagueness, in particular, belongs, in some degree, to all human thinking; we can diminish it indefinitely, but we can never abolish it wholly. Philosophy, accordingly, is a continuing activity, not something in which we can achieve final perfection once for all. In this respect, philosophy has suffered from its association with theology. Theological dogmas are fixed, and are regarded by the orthodox as incapable of improvement. Philosophers have too often tried to produce similarly final systems: they have not been content with the gradual approximations that satisfied men of science. In this they seem to me to have been mistaken. Philosophy should be piecemeal and provisional like science; final truth belongs to heaven, not to this world.

The three defects which I have mentioned are interconnected, and by becoming aware of any one we may be led to recognise the other two. I will illustrate all three by a few examples.

Let us take first the belief in common objects, such as tables and chairs and trees. We all feel quite sure about these in ordinary life, and yet our reasons for confidence are really very inadequate. Naïve common sense supposes that they are what they appear to be, but that is impossible, since they do not appear exactly alike to any two simultaneous observers; at least, it is impossible if the object is a single thing, the same for all observers. If we are going to admit that the object is not what we see, we can no longer feel the same assurance that there is an object; this is the first intrusion of doubt. However, we shall speedily recover from this set-back, and say that of course the object is 'really' what physics says it is.¹ Now physics says that a table or a chair is 'really' an incredibly vast system of electrons and protons in rapid motion, with empty space in between. This is all very well. But the physicist, like the ordinary man, is dependent upon his senses for the existence of the physical world. If you go up to him solemnly and say, 'Would you be so kind as to tell me, as a physicist, what a chair really is?' you will get a learned answer. But if you say, without preamble, 'Is there a chair there?' he will say, 'Of course there is; can't you see it?' To this you ought to reply in the negative. You ought to say, 'No, I see certain patches of colour, but I don't see any electrons or protons, and you tell me that they are what a chair consists of.' He may reply: 'Yes, but a large number of electrons and protons close together look like a patch of colour.' 'What do you mean by "look like"?' you will then ask. He is ready with an answer. He means that light-waves start from the electrons and protons (or, more probably, are reflected by them from a source of light), reach the eye, have a series of effects upon the rods and cones, the optic nerve, and the brain, and finally produce a sensation. But he has never seen an eye or an optic nerve or a brain any more than he has seen a chair: he has only seen patches of colour which, he says, are what eyes 'look like'. That is to say, he thinks that the sensation you have when (as you think) you see a chair, has a series of causes, physical and psychological, but all of them on his own showing, lie essentially and forever outside experience. Nevertheless, he pretends to base his science upon observation. Obviously there is here a problem for the logician, a problem belonging not to physics, but to quite another kind of study. This is a first example of the way in which the pursuit of precision destroys certainty.

The physicist believes that he infers his electrons and protons from what he perceives. But the inference is never clearly set forth in a logical chain, and, if it were, it might not look sufficiently plausible to warrant much confidence. In actual fact, the whole development from common-sense objects to electrons and protons has been governed by certain beliefs, seldom conscious, but existing in every natural man. These beliefs are not unalterable, but they grow and develop like a tree. We start by thinking that a chair is as it appears to be, and is still there when we are not looking. But we find,

by a little reflection, that these two beliefs are incompatible. If the chair is to persist independently of being seen by us, it must be something other than the patch of colour we see, because this is found to depend upon conditions extraneous to the chair, such as how the light falls, whether we are wearing blue spectacles, and so on. This forces the man of science to regard the 'real' chair as the cause (or an indispensable part of the cause) of our sensations when we see the chair. Thus we are committed to causation as an *a priori* belief without which we should have no reason for supposing that there is a 'real' chair at all. Also, for the sake of permanence we bring in the notion of substance: the 'real' chair is a substance, or collection of substances, possessed of permanence and the power to cause sensations. This metaphysical belief has operated, more or less unconsciously, in the inference from sensations to electrons and protons. The philosopher must drag such beliefs into the light of day, and see whether they still survive. Often it will be found that they die on exposure.

Let us now take up another point. The evidence for a physical law, or for any scientific law, always involves both memory and testimony. We have to rely both upon what we remember to have observed on former occasions, and on what others say they have observed. In the very beginnings of science, it may have been possible sometimes to dispense with testimony; but very soon every scientific investigation began to be built upon previously ascertained results, and thus to depend upon what others had recorded. In fact, without the corroboration of testimony we should hardly have had much confidence in the existence of physical objects. Sometimes people suffer from hallucinations, that is to say, they think they perceive physical objects, but are not confirmed in this belief by the testimony of others. In such cases, we decide that they are mistaken. It is the similarity between the perceptions of different people in similar situations that makes us feel confident of the external causation of our perceptions; but for this, whatever naïve beliefs we might have had in physical objects would have been dissipated long ago. Thus memory and testimony are essential to science. Nevertheless, each of these is open to criticism by the sceptic. Even if we succeed, more or less, in meeting his criticism, we shall, if we are rational, be left with a less complete confidence in our original beliefs than we had before. Once more, we shall become less cocksure as we become more accurate.

Both memory and testimony lead us into the sphere of psychology. I shall not at this stage discuss either beyond the point at which it is clear that there are genuine philosophical problems to be solved. I shall begin with memory.

Memory is a word which has a variety of meanings. The kind that I am concerned with at the moment is the recollection of past occurrences. This is so notoriously fallible that every experimenter makes a record of the result of his experiment at the earliest possible moment: he considers the inference from written words to past events less likely to be mistaken than the direct beliefs which constitute memory. But some time, though perhaps only a few seconds, must elapse between the observation and the making of the record, unless the record is so fragmentary that memory is needed to interpret it. Thus we do not escape from the need of trusting memory to some degree. Moreover, without memory we should not think of interpreting records as applying to the past, because we should not know that there was any past. Now, apart from arguments as to the proved fallibility of memory, there is one awkward consideration which the sceptic may urge. Remembering, which occurs now, cannot possibly – he may say – prove that what is remembered occurred at some other time, because the world might have sprung into being five minutes ago, exactly as it then was, full of acts of remembering which were entirely misleading. Opponents of Darwin, such as Edmund Gosse's father, urged a very similar argument against evolution. The world, they said, was created in 4004 bc, complete with fossils, which were inserted to try our faith. The world was created suddenly, but was made such as it would have been if it had evolved. There is no logical impossibility about this view. And similarly there is no logical impossibility in the view that the world was created five minutes ago complete with memories and records. This may seem an improbable hypothesis, but it is not logically

refutable.

Apart from this argument, which may be thought fantastic, there are reasons of detail for being more or less distrustful of memory. It is obvious that no *direct* confirmation of a belief about a past occurrence is possible, because we cannot make the past recur. We can find confirmation of an indirect kind in the revelations of others and in contemporary records. The latter, as we have seen, involve some degree of memory, but they may involve very little, for instance when a shorthand report of a conversation or speech has been made at the time. But even then, we do not escape wholly from the need of memory extending over a longer stretch of time. Suppose a wholly imaginary conversation were produced for some criminal purpose, we should depend upon the memories of witnesses to establish its fictitious character in a law-court. And all memory which extends over a long period of time is very apt to be mistaken; this is shown by the errors invariably found in autobiographies. Any man who comes across letters which he wrote many years ago can verify the manner in which his memory has falsified past events. For these reasons, the fact that we cannot free ourselves from dependence upon memory in building up knowledge is, *prima facie*, a reason for regarding what passes for knowledge as not quite certain. The whole of this subject of memory will be considered more carefully in later chapters.

Testimony raises even more awkward problems. What makes them so awkward is the fact that testimony is involved in building up our knowledge of physics, and that, conversely, physics is required in establishing the trustworthiness of testimony. Moreover, testimony raises all the problems connected with the relation of mind and matter. Some eminent philosophers, e.g. Leibniz, have constructed systems according to which there would be no such thing as testimony, and yet have accepted as true many things which cannot be known without it. I do not think philosophy has quite done justice to this problem, but a few words will, I think, show its gravity.

For our purposes, we may define testimony as noises heard, or shapes seen, analogous to those which we should make if we wished to convey an assertion, and believed by the hearer or seer to be due to someone else's desire to convey an assertion. Let us take a concrete instance: I ask a policeman the way, and he says, 'Fourth to the right, third to the left'. That is to say, I hear these sounds, and perhaps I see what I interpret as his lips moving. I assume that he has a mind more or less like my own, and has uttered these sounds with the same intention as I should have had if I had uttered them, namely to convey information. In ordinary life, all this is not, in any proper sense, an inference; it is belief which arises in us on the appropriate occasion. But if we are challenged, we have to substitute inference for spontaneous belief, and the more the inference is examined the more shaky it looks.

The inference that has to be made has two steps, one physical and one psychological. The physical inference is of the sort we considered a moment ago, in which we pass from a sensation to a physical occurrence. We hear noises, and think they proceed from the policeman's body. We see moving shapes, and interpret them as physical motions of his lips. This inference, as we saw earlier, is in part justified by testimony; yet now we find that it has to be made before we can have reason to believe that there is any such thing as testimony. And this inference is certainly sometimes mistaken. Lunatics hear voices which other people do not hear; instead of crediting them with abnormally acute hearing, we lock them up. But if we sometimes hear sentences which have not proceeded from a body, why should this not always be the case? Perhaps our imagination has conjured up all the things that we think others have said to us. But this is part of the general problem of inferring physical objects from sensations, which, difficult as it is, is not the most difficult part of the logical puzzles concerning testimony. The most difficult part is the inference from the policeman's body to his mind. I do not mean any special insult to policemen; I would say the same of politicians and even of philosophers.

The inference to the policeman's mind certainly *may* be wrong. It is clear that a maker of waxwork could make a life-like policeman and put a gramophone inside him, which would cause him

periodically to tell visitors the way to the most interesting part of the exhibition at the entrance to which he would stand. They would have just the sort of evidence of his being alive that is found convincing in the case of other policemen. Descartes believed that animals have no minds, but are merely complicated automata. Eighteenth-century materialists extended this doctrine to men. But I am not now concerned with materialism; my problem is a different one. Even a materialist must admit that, when he talks, he means to convey something, that is to say, he uses words as signs, not as mere noises. It may be difficult to decide exactly what is meant by this statement, but it is clear that it means something, and that it is true of one's own remarks. The question is: Are we sure that it is true of the remarks we hear, as well as of those we make? Or are the remarks we hear perhaps just like other noises, merely meaningless disturbances of the air? The chief argument against this is analogy: the remarks we hear are so like those we make that we think they must have similar causes. But although we cannot dispense with analogy as a form of inference, it is by no means demonstrative, and not infrequently leads us astray. We are therefore left, once more, with a *prima facie* reason for uncertainty and doubt.

This question of what we mean ourselves when we speak brings me to another problem, that of introspection. Many philosophers have held that introspection gave the most indubitable of all knowledge; others have held that there is no such thing as introspection. Descartes, after trying to doubt everything, arrived at 'I think, therefore I am', as a basis for the rest of knowledge. Dr. John B. Watson the behaviourist holds, on the contrary, that we do not think, but only talk. Dr. Watson, in real life, gives as much evidence of thinking as anyone does, so, if *he* is not convinced that he thinks, we are all in a bad way. At any rate, the mere existence of such an opinion as his, on the part of a competent philosopher, must suffice to show that introspection is not so certain as some people have thought. But let us examine this question a little more closely.

The difference between introspection and what we call perception of external objects seems to me to be connected, not with what is primary in our knowledge, but with what is inferred. We think, at one time, that we are seeing a chair; at another, that we are thinking about philosophy. The first we call perception of an external object; the second we call introspection. Now we have already found reason to doubt external perception, in the full-blooded sense in which common sense accepts it. I shall consider later what there is that is indubitable and primitive in perception; for the moment, I shall anticipate by saying that what is indubitable in 'seeing a chair' is the occurrence of a certain pattern of colours. But this occurrence, we shall find, is connected with me just as much as with the chair; no one except myself can see exactly the pattern that I see. There is thus something subjective and private about what we take to be external perception, but this is concealed by precarious extensions into the physical world. I think introspection, on the contrary, involves precarious extensions into the mental world: shorn of these, it is not very different from external perception shorn of its extensions. To make this clear, I shall try to show what we know to be occurring when, as we say, we think about philosophy.

Suppose, as the result of introspection, you arrive at a belief which you express in the words: 'I am now believing that mind is different from matter'. What do you know, apart from inferences, in such a case? First of all, you must cut out the word 'I': the person who believes is an inference, not part of what you know immediately. In the second place, you must be careful about the word 'believing'. I am not now concerned with what this word should mean in logic or theory of knowledge; I am concerned with what it can mean when used to describe a direct experience. In such a case, it would seem that it can only describe a certain kind of feeling. And as for the proposition you think you are believing, namely, 'mind is different from matter', it is very difficult to say what is really occurring when you think you believe it. It may be mere words, pronounced, visualised, or in auditory or motor images. It may be images of what the words 'mean', but in that case it will not be at all an accurate

representation of the logical content of the proposition. You may have an image of a statue of Newton 'voyaging through strange seas of thought alone', and another image of a stone rolling downhill, combined with the words 'how different!' Or you may think of the difference between composing a lecture and eating your dinner. It is only when you come to expressing your thought in words that you approach logical precision.

Both in introspection and in external perception, we try to express what we know in words.

We come here, as in the question of testimony, upon the social aspect of knowledge. The purpose of words is to give the same kind of publicity to thought as is claimed for physical objects. A number of people can hear a spoken word or see a written word, because each is a physical occurrence. If I say to you, 'mind is different from matter', there may be only a very slight resemblance between the thought that I am trying to express and the thought which is aroused in you, but these two thoughts have just this in common, that they can be expressed by the same words. Similarly, there may be great differences between what you and I see when, as we say, we look at the same chair; nevertheless we can both express our perceptions by the same words.

A thought and a perception are thus not so very different in their own nature. If physics is true, they are different in their correlations: when I see a chair, others have more or less similar perceptions, and it is thought that these are all connected with light-waves coming from the chair, whereas, when I think a thought, others may not be thinking anything similar. But this applies also to feeling a toothache, which would not usually be regarded as a case of introspection. On the whole, therefore, there seems no reason to regard introspection as a different *kind* of knowledge from external perception. But this whole question will concern us again at a later stage.

As for the *trustworthiness* of introspection, there is again a complete parallelism with the case of external perception. The actual datum, in each case, is unimpeachable, but the extensions which we make instinctively are questionable. Instead of saying, 'I am believing that mind is different from matter', you ought to say, 'certain images are occurring in a certain relation to each other, accompanied by a certain feeling'. No words exist for describing the actual occurrence in all its particularity; all words, even proper names, are general, with the possible exception of 'this', which is ambiguous. When you translate the occurrence into words, you are making generalisations and inferences, just as you are when you say 'there is a chair'. There is really no vital difference between the two cases. In each case, what is really a datum is unutterable, and what can be put into words involves inferences which may be mistaken.

When I say that 'inferences' are involved, I am saying something not quite accurate unless carefully interpreted. In 'seeing a chair', for instance, we do not first apprehend a coloured pattern, and then proceed to infer a chair: belief in the chair arises spontaneously when we see the coloured pattern. But this belief has causes not only in the present physical stimulus, but also partly in past experience, partly in reflexes. In animals, reflexes play a very large part; in human beings, experience is more important. The infant learns slowly to correlate touch and sight, and to expect others to see what he sees. The habits which are thus formed are essential to our adult notion of an object such as a chair. The perception of a chair by means of sight has a physical stimulus which affects only sight directly, but stimulates ideas of solidity and so on through early experience. The inference might be called 'physiological'. An inference of this sort is evidence of past correlations, for instance between touch and sight, but may be mistaken in the present instance; you may, for example, mistake a reflection in a large mirror for another room. Similarly in dreams we make mistaken physiological inferences. We cannot therefore feel certainty in regard to things which are in this sense inferred, because, when we try to accept as many of them as possible, we are nevertheless compelled to reject some for the sake of self-consistency.

We arrived a moment ago at what we called 'physiological inference' as an essential ingredient in

the common-sense notion of a physical object. Physiological inference, in its simplest form, means this: ~~given a stimulus S, to which, by a reflex, we react by a bodily movement R, and a stimulus S'~~ with a reaction R', if the two stimuli are frequently experienced together, S will in time produce R'.² That is to say, the body will act as if S' were present. Physiological inference is important in theory of knowledge, and I shall have much to say about it at a later stage. For the present, I have mentioned it partly to prevent it from being confused with logical inference, and partly in order to introduce the problem of *induction*, about which we must say a few preliminary words at this stage.

Induction raises perhaps the most difficult problem in the whole theory of knowledge. Every scientific law is established by its means, and yet it is difficult to see why we should believe it to be a valid logical process. Induction, in its bare essence, consists of the argument that, because A and B have been often found together and never found apart, therefore, when A is found again, B will probably also be found. This exists first as a 'physiological inference', and as such is practised by animals. When we first begin to reflect, we find ourselves making inductions in the physiological sense, for instance, expecting the food we see to have a certain kind of taste. Often we only become aware of this expectation through having it disappointed, for instance if we take salt thinking it is sugar. When mankind took to science, they tried to formulate logical principles justifying this kind of inference. I shall discuss these attempts in later chapters; for the present, I will only say that they seem to me very unsuccessful. I am convinced that induction must have validity of some kind in some degree, but the problem of showing how or why it can be valid remains unsolved. Until it is solved, the rational man will doubt whether his food will nourish him, and whether the sun will rise tomorrow. I am not a rational man in this sense, but for the moment I shall pretend to be. And even if we cannot be completely rational, we should probably all be the better for becoming somewhat more rational than we are. At the lowest estimate, it will be an interesting adventure to see whither reason will lead us.

The problems we have been raising are none of them new, but they suffice to show that our everyday views of the world and of our relations to it are unsatisfactory. We have been asking whether we know this or that, but we have not yet asked what 'knowing' is. Perhaps we shall find that we have had wrong ideas as to knowing, and that our difficulties grow less when we have more correct ideas on this point. I think we shall do well to begin our philosophical journey by an attempt to understand knowing considered as part of the relation of man to his environment, forgetting, for the moment, the fundamental doubts with which we have been concerned. Perhaps modern science may enable us to see philosophical problems in a new light. In that hope, let us examine the relation of man to his environment with a view to arriving at a scientific view as to what constitutes knowledge.

NOTES

- 1 I am not thinking here of the elementary physics to be found in a school text-book; I am thinking of modern theoretical physics more particularly as regards the structure of atoms, as to which I shall have more to say in later chapters.
- 2 E.g. if you hear a sharp noise and see a bright light simultaneously often, in time the noise without the light will cause your pupils to contract.

Part I

Man from Without

MAN AND HIS ENVIRONMENT

If our scientific knowledge were full and complete, we should understand ourselves and the world and our relation to the world. As it is, our understanding of all three is fragmentary. For the present, it is the third question, that of our relation to the world, that I wish to consider, because this brings us nearest to the problems of philosophy. We shall find that it will lead us back to the other two questions, as to the world and as to ourselves, but that we shall understand both these better if we have considered first how the world acts upon us and how we act upon the world.

There are a number of sciences which deal with Man. We may deal with him in natural history, as one among the animals, having a certain place in evolution, and related to other animals in ascertainable ways. We may deal with him in physiology, as a structure capable of performing certain functions, and reacting to the environment in ways of which some, at least, can be explained by chemistry. We may study him in sociology, as a unit in various organisms, such as the family and the state. And we may study him, in psychology, as he appears to himself. This last gives what we may call an internal view of man, as opposed to the other three, which give an external view. That is to say, in psychology we use data which can only be obtained when the observer and the observed are the same person, whereas in the other ways of studying Man all our data can be obtained by observing other people. There are different ways of interpreting this distinction, and different views of its importance, but there can be no doubt that there is such a distinction. We can remember our own dreams, whereas we cannot know the dreams of others unless they tell us about them. We know when we have toothache, when our food tastes too salt, when we are remembering some past occurrence, and so on. All these events in our lives other people cannot know in the same direct way. In this sense we all have an inner life, open to our own inspection but to no one else's. This is no doubt the source of the traditional distinction of mind and body: the body was supposed to be that part of us which others could observe, and the mind that part which was private to ourselves. The importance of the distinction has been called in question in recent times, and I do not myself believe that it has any fundamental philosophical significance. But historically it has played a dominant part in determining the conceptions from which men set out when they began to philosophise, and on this account, if on no other, it deserves to be borne in mind.

Knowledge, traditionally, has been viewed from within, as something which we observe in ourselves rather than as something which we can see others displaying. When I say that it has been so viewed, I mean that this has been the practice of philosophers; in ordinary life, people have been more objective. In ordinary life, knowledge is something which can be tested by examinations, that is to say, it consists in a certain kind of response to a certain kind of stimulus. This objective way of viewing knowledge is, to my mind, much more fruitful than the way which has been customary in philosophy. I mean that, if we wish to give a definition of 'knowing', we ought to define it as a manner of reacting to the environment, not as involving something (a 'state of mind') which only the person who has the knowledge can observe. It is because I hold this view that I think it best to begin with Man and his environment, rather than with those matters in which the observer and the observed must be the same person. Knowing, as I view it, is a characteristic which may be displayed in our reactions to our environment; it is therefore necessary first of all to consider the nature of these reactions as they appear in science.

Let us take some everyday situation. Suppose you are watching a race, and at the appropriate moment you say, 'They're off'. This exclamation is a reaction to the environment, and is taken to

show knowledge if it is made at the same time as others make it. Now let us consider what has been really happening, according to science. The complication of what has happened is almost incredible. It may conveniently be divided into four stages: first, what happened in the outside world between the runners and your eyes; secondly, what happened in your body from your eyes to your brain; thirdly, what happened in your brain; fourthly, what happened in your body from your brain to the movement of your throat and tongue which constituted your exclamation. Of these four stages, the first belongs to physics, and is dealt with in the main by the theory of light; the second and fourth belong to physiology; the third, though it should theoretically also belong to physiology, belongs in fact rather to psychology, owing to our lack of knowledge as to the brain. The third stage embodies the results of experience and learning. It is responsible for the fact that you speak, which an animal would not do, and that you speak English, which a Frenchman would not do. This immensely complicated occurrence is, nevertheless, about the simplest example of knowledge that could possibly be given.

For the moment, let us leave on one side the part of this process which happens in the outside world and belongs to physics. I shall have much to say about it later, but what has to be said is not altogether easy, and we will take less abstruse matters first. I will merely observe that the event which we are said to perceive, namely, the runners starting, is separated by a longer or shorter chain of events from the event which happens at the surface of our eyes. It is this last that is what is called the 'stimulus'. Thus the event that we are said to perceive when we see is not the stimulus, but an anterior event related to it in a way that requires investigation. The same applies to hearing and smell, but not to touch or to perception of states of our own body. In these cases, the first of the above four stages is absent. It is clear that, in the case of sight, hearing and smell, there must be a certain relation between the stimulus and the event said to be perceived, but we will not now consider what this relation must be. We will consider, rather, the second, third, and fourth stages in an act of perceptive knowledge. This is the more legitimate as these stages always exist, whereas the first is confined to certain senses.

The second stage is that which proceeds from the sense-organ to the brain. It is not necessary for our purposes to consider exactly what goes on during this journey. A purely physical event – the stimulus – happens at the boundary of the body, and has a series of effects which travel along the afferent nerves to the brain. If the stimulus is light, it must fall on the eye to produce the characteristic effects; no doubt light falling on other parts of the body has effects, but they are not those that distinguish vision. Similarly, if the stimulus is sound, it must fall on the ear. A sense-organ, like a photographic plate, is responsive to stimuli of a certain sort: light falling on the eye has effects which are different for different wave-lengths, intensities, and directions. When the events in the eye due to incident light have taken place, they are followed by events in the optic nerve, leading at last to some occurrence in the brain – an occurrence which varies with the stimulus. The occurrence in the brain must be different for different stimuli in all cases where we can *perceive* differences. Red and yellow, for instance, are distinguishable in perception; therefore the occurrences along the optic nerve and in the brain must have a different character when caused by red light from what they have when caused by yellow light. But when two shades of colour are so similar that they can only be distinguished by delicate instruments, not by perception, we cannot be sure that they cause occurrences of different characters in the optic nerve and brain.

When the disturbance has reached the brain, it may or may not cause a characteristic set of events in the brain. If it does not, we shall not be what is called 'conscious' of it. For to be 'conscious' of seeing yellow, whatever else it may be, must certainly involve some kind of cerebral reaction to the message brought by the optic nerve. It may be assumed that the great majority of messages brought to the brain by the afferent nerves never secure any attention at all – they are like letters to a government office which remain unanswered. The things in the margin of the field of vision, unless they are in some way interesting, are usually unnoticed; if they are noticed, they are brought into the centre of the field of

vision unless we make a deliberate effort to prevent this from occurring. These things are visible, in the sense that we could be aware of them if we chose, without any change in our physical environment or in our sense-organs; that is to say, only a cerebral change is required to enable them to cause a reaction. But usually they do not provoke any reaction; life would be altogether too wearing if we had to be always reacting to everything in the field of vision. Where there is no reaction, the second stage completes the process, and the third and fourth stages do not arise. In that case, there has been nothing that could be called 'perception' connected with the stimulus in question.

To us, however, the interesting case is that in which the process continues. In this case there is first a process in the brain, of which the nature is as yet conjectural, which travels from the centre appropriate to the sense in question to a motor centre. From there there is a process which travels along an efferent nerve, and finally results in a muscular event causing some bodily movement. In our illustration of the man watching the beginning of a race, a process travels from the part of the brain concerned with sight to the part concerned with speech; this is what we called the third stage. Then a process travels along the efferent nerves and brings about the movements which constitute saying 'They're off'; this is what we called the fourth stage.

Unless all four stages exist, there is nothing that can be called 'knowledge'. And even when they are all present, various further conditions must be satisfied if there is to be 'knowledge'. But these observations are premature, and we must return to the analysis of our third and fourth stages.

The third stage is of two sorts, according as we are concerned with a reflex or with a 'learned reaction', as Dr. Watson calls it. In the case of a reflex, if it is complete at birth, a new-born infant or animal has a brain so constituted that, without the need of any previous experience, there is a connection between a certain process in the afferent nerves and a certain other process in the efferent nerves. A good example of a reflex is sneezing. A certain kind of tickling in the nose produces a fairly violent movement having a very definite character, and this connection exists already in the youngest infants. Learned reactions, on the other hand, are such as only occur because of the effect of previous occurrences in the brain. One might illustrate by an analogy which, however, would be misleading if pressed. Imagine a desert in which no rain has ever fallen, and suppose that at last a thunderstorm occurs in it; then the course taken by the water will correspond to a reflex. But if rain continues to fall frequently, it will form watercourses and river valleys; when this has occurred, the water runs away along pre-formed channels, which are attributable to the past 'experience' of the region. This corresponds to 'learned reactions'. One of the most notable examples of learned reactions is speech: we speak because we have learned a certain language, not because our brain had originally any tendency to react in just that way. Perhaps all knowledge, certainly nearly all, is dependent upon learned reactions, i.e. upon connections in the brain which are not part of man's congenital equipment but are the result of events which have happened to him.

To distinguish between learned and unlearned responses is not always an easy task. It cannot be assumed that responses which are absent during the first weeks of life are all learned. To take the most obvious instance: sexual responses change their character to a greater or less extent at puberty, as a result of changes in the ductless glands, not as a result of experience. But this instance does not stand alone: as the body grows and develops, new modes of response come into play, modified, no doubt, by experience, but not wholly due to it. For example: a new-born baby cannot run, and therefore does not run away from what is terrifying, as an older child does. The older child has learned to run, but has not necessarily learned to run *away*; the stimulus in learning to run may have never been a terrifying object. It would therefore be a fallacy to suppose that we can distinguish between learned and unlearned responses by observing what a new-born infant does, since reflexes may come into play at a later stage. Conversely, some things which a child does at birth may have been learned, when they are such as it could have done in the womb – for example, a certain amount of kicking and stretching. The

whole distinction between learned and unlearned responses, therefore, is not so definite as we could wish. At the two extremes we get clear cases, such as sneezing on the one hand and speaking on the other; but there are intermediate forms of behaviour which are more difficult to classify.

This is not denied even by those who attach most importance to the distinction between learned and unlearned responses. In Dr. Watson's *Behaviourism* (p. 103), there is a 'Summary of Unlearned Equipment', which ends with the following paragraph:

Other activities appear at a later stage – such as blinking, reaching, handling, handedness, crawling, standing, sitting-up, walking, running, jumping. *In the great majority of these later activities it is difficult to say how much of the act as a whole is due to training or conditioning. A considerable part is unquestionably due to the growth changes in structure, and the remainder is due to training and conditioning.*

(Watson's italics)

It is not possible to make a logically sharp distinction in this matter; in certain cases we have to be satisfied with something less exact. For example, we might say that those developments which are merely due to normal growth are to count as unlearned, while those which depend upon special circumstances in the individual biography are to count as learned. But take, say, muscular development: this will not take place normally unless the muscles are used, and if they are used they are bound to learn some of the skill which is appropriate to them. And some things which must certainly count as learned, such as focussing with the eyes, depend upon circumstances which are normal and must be present in the case of every child that is not blind. The whole distinction, therefore, is one of degree rather than of kind; nevertheless it is valuable.

The value of the distinction between learned and unlearned reactions is connected with the laws of learning, to which we shall come in the next chapter. Experience modifies behaviour according to certain laws, and we may say that a learned reaction is one in the formation of which these laws have played a part. For example: children are frightened of loud noises from birth, but are not at first frightened of dogs; after they have heard a dog barking loudly, they may become frightened of dogs, which is a learned reaction. If we knew enough about the brain, we could make the distinction precise by saying that learned reactions are those depending upon modifications of the brain other than mere growth. But as it is, we have to judge by observations of bodily behaviour, and the accompanying modifications in the brain are assumed on a basis of theory rather than actually observed.

The essential points, for our purposes, are comparatively simple. Man or any other animal, at birth is such as to respond to certain stimuli in certain specific ways, i.e. by certain kinds of bodily movements; as he grows, these ways of responding change, partly as the mere result of developing structure, partly in consequence of events in his biography. The latter influence proceeds according to certain laws, which we shall consider, since they have much to do with the genesis of 'knowledge'.

But – the indignant reader may be exclaiming – knowing something is not a bodily movement, but state of mind, and yet you talk to us about sneezing and such matters. I must ask the indignant reader patience. He 'knows' that he has states of mind, and that his knowing is itself a state of mind. I do not deny that he has states of mind, but I ask two questions: First, what sort of thing are they? Secondly, what evidence can he give me that he knows about them? The first question he may find very difficult and if he wants, in his answer, to show that states of mind are something of a sort totally different from bodily movements, he will have to tell me also what bodily movements are, which will plunge him into the most abstruse parts of physics. All this I propose to consider later on, and then I hope the indignant reader will be appeased. As to the second question, namely, what evidence of his knowledge another man can give me, it is clear that he must depend upon speech or writing, i.e. in either case

upon bodily movements. Therefore whatever knowledge may be to the knower, as a social phenomenon it is something displayed in bodily movements. For the present I am deliberately—postponing the question of what knowledge is to the knower, and confining myself to what it is for the external observer. And for him, necessarily, it is something shown by bodily movements made in answer to stimuli – more specifically, to examination questions. What else it may be I shall consider at a later stage.

However we may subsequently add to our present account by considering how knowledge appears to the knower, that will not invalidate anything that we may arrive at by considering how knowledge appears to the external observer. And there is something which it is important to realise, namely, that we are concerned with a process in which the environment first acts upon a man, and then he reacts upon the environment. This process has to be considered as a whole if we are to discuss what knowledge is. The older view would have been that the effect of the environment upon us might constitute a certain kind of knowledge (perception), while our reaction to the environment constituted volition. These were, in each case, ‘mental’ occurrences, and their connection with nerves and brain remained entirely mysterious. I think the mystery can be eliminated, and the subject removed from the realm of guesswork, by starting with the whole cycle from stimulus to bodily movement. In this way knowing becomes something active, not something contemplative. Knowing and willing, in fact, are merely aspects of the one cycle, which must be considered in its entirety if it is to be rightly understood.

A few words must be said about the human body as a mechanism. It is an inconceivably complicated mechanism, and some men of science think that it is not explicable in terms of physics and chemistry but is regulated by some ‘vital principle’ which makes its laws different from those of dead matter. These men are called ‘vitalists’. I do not myself see any reason to accept their view, but at the same time our knowledge is not sufficient to enable us to reject it definitely. What we can say is that their case is not proved, and that the opposite view is, scientifically, a more fruitful working hypothesis. It is better to look for physical and chemical explanations where we can, since we know of many processes in the human body which can be accounted for in this way, and of none which *certainly* cannot. To invoke a ‘vital principle’ is to give an excuse for laziness, when perhaps more diligent research would have enabled us to do without it. I shall therefore assume, as a working hypothesis, that the human body acts according to the same laws of physics and chemistry as those which govern dead matter, and that it differs from dead matter, not by its laws, but by the extraordinary complexity of its structure.

The movements of the human body may, none the less, be divided into two classes, which we may call respectively ‘mechanical’ and ‘vital’. As an example of the former, I should give the movement of a man falling from a cliff into the sea. To explain this, in its broad features, it is not necessary to take account of the fact that the man is alive; his centre of gravity moves exactly as that of a stone would move. But when a man climbs up a cliff, he does something that dead matter of the same shape and weight would never do; this is a ‘vital’ movement. There is in the human body a lot of stored chemical energy in more or less unstable equilibrium; a very small stimulus can release this energy, and cause a considerable amount of bodily movement. The situation is analogous to that of a large rock delicately balanced on the top of a conical mountain: a tiny shove may send it thundering down into the valley, in one direction or another according to the direction of the shove. So if you say to a man ‘Your house is on fire’, he will start running; although the stimulus contained very little energy, his expenditure of energy may be tremendous. He increases the available energy by panting, which makes his body burn up faster and increases the energy due to combustion; this is just like opening the draught in a furnace. ‘Vital’ movements are those that use up this energy which is in unstable equilibrium. It is they alone that concern the biochemist, the physiologist, and the psychologist. The

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