THE SUBJECT-MATTER OF PHILOSOPHY, AND ITS RELATIONS TO THE SPECIAL SCIENCES

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I shall devote this introductory chapter [of *Scientific Thought*] to stating what I think philosophy is about, and why the other sciences are important to it and it is important to the other sciences. A very large number of scientists [have] the strong conviction that philosophy is mainly moonshine, and the gravest doubts as to whether it has anything of the slightest importance to tell them. I do not think that this view of philosophy is true, or I should not waste my time and cheat my students by trying to teach it. But I do think that such a view is highly plausible, and that the proceedings of many philosophers have given the general public some excuse for its unfavourable opinion of philosophy. I shall therefore begin by stating the case against philosophy as strongly as I can, and shall then try to show that, in spite of all objections, it really is [a genuine area of enquiry, a definite science the broadest sense] with a distinct subject-matter. I shall try to show that it really does advance and that it is related to the special sciences in such a way that the co-operation of philosophers and scientists is of the utmost benefit to the studies of both.

1. The scientist's challenge

I think that an intelligent scientist would put his case against philosophy somewhat as follows. He would say: "Philosophers discuss such subjects as the existence of God, the immortality of the soul, and the freedom of the will. They spin out of their minds fanciful theories, which can neither be supported nor refuted by experiment. No two philosophers agree, and no progress is made. Philosophers are still discussing with great heat the same questions that they discussed in Greece thousands of years ago. What a poor show does this make when compared with mathematics or any of the natural sciences! Here there is continual steady progress; the discoveries of one age are accepted by the next, and become the basis for further advances in knowledge. There is controversy indeed, but it is fruitful controversy which advances the science and ends in definite agreement; it is not the aimless wandering in a circle to which philosophy is condemned. Does this not very strongly suggest that philosophy is either a mere playing with words, or that, if it has a genuine subject-matter, this is beyond the reach of human intelligence?"

Excerpted from the 'Introduction' to *Scientific Thought* (1923) by Charlie Dunbar Broad (1887–1971). Some quaint-looking orthographic devices, like capitalising 'Philosophy', have been altered; layout has been changed and sectioning added to aid readability; and some sentences that would give the modern reader pause for various reasons have been omitted. But Broad's habit of always referring to philosophers or scientists as 'he' certainly still gives the game away: this piece obviously wasn't written yesterday! However, it remains a particularly lucid account of the nature and role of philosophy as seen by someone at a key stage in the history of what we now think of as the analytic tradition, and it is very well worth reading by any beginning philosophy student.

Our scientist might still further strengthen his case by reflecting on the past history of philosophy and on the method by which it is commonly taught to students. He will remind us that most of the present sciences started by being mixed up with philosophy, that so long as they kept this connection they remained misty and vague, and that as soon as their fundamental principles began to be discovered they cut their disreputable associate, wedded the experimental method, and settled down to the steady production of a strapping family of established truths. Mechanics is a case in point. So long as it was mixed up with philosophy it made no progress; when the true laws of motion were discovered by the experiments and reasoning of Galileo it ceased to be part of philosophy and began to develop into a separate science. Does this not suggest that the subject-matter of philosophy is just that ever-diminishing fragment of the universe in which the scientist has not yet discovered laws, and where we have therefore to put up with guesses? Are not such guesses the best that philosophy has to offer, and will they not be swept aside as soon as some man of genius, like Galileo or Dalton or Faraday, sets the subject on the sure path of science?

Should our scientist talk to students of philosophy and ask what happens at their lectures, his objections will most likely be strengthened. The answer may take the classical form. "He tells us what everyone knows in language that no one can understand." But, even if the answer be not so unfavourable as this, it is not unlikely to take the form "We hear about the views of Plato and Kant and Berkeley on such subjects as the reality of the external world and the immortality of the soul." Now the scientist will at once contrast this with the method of teaching in his own subject, and will be inclined to say—if, e.g., he be a chemist—"We learn what are the *laws* of chemical combination and the structure of the Benzene nucleus, we do not worry our heads as to what exactly Dalton thought or Kekule said. If philosophers really know anything about the reality of the external world why do they not say straight-forwardly that it is real or unreal, and prove it? The fact that they apparently prefer to discuss the divergent views of a collection of eminent 'back-numbers' on the question strongly suggests that they know that there is no means of answering it, and that nothing better than groundless personal opinions can be offered."

I have put these objections as strongly as I can, and I now propose to see just how much there is in them.

2. Tasks for philosophy

First, as to the alleged unprogressive character of philosophy. This is, I think, an illusion; but it is a very natural one. Let us take the question of the reality of the external world as an example. Common-sense says that chairs and tables exist independently of whether anyone happens to perceive them or not. We study Berkeley and find him claiming to prove that such things can only exist so long as they are perceived by someone. Later on we read some modern realist ... and we are told that Berkeley was wrong, and that chairs and tables can and do exist unperceived. We seem merely to have got back to where we started from, and to have wasted our time.

But this is not really so, for two reasons:

(i) What we believe at the end of the process and what we believed at the beginning are by no means the same, although we express the two beliefs by the same form

of words. The original belief of common-sense was vague, crude and unanalysed. Berkeley's arguments have forced us to recognise a number of distinctions and to define much more clearly what we mean by the statement that chairs and tables exist unperceived. What we find is that the original crude belief of common-sense consisted of a number of different beliefs, mixed up with each other. Some of these may be true and others false

Berkeley's arguments really do refute or throw grave doubt on some of them, but they leave others standing. Now it may be that those which are left are enough to constitute a belief in the independent reality of external objects. If so this final belief in the reality of the external world is much clearer and subtler than the verbally similar belief with which we began. It has been purified of irrelevant factors, and is no longer a vague mass of different beliefs mixed up with each other.

(ii) Not only will our final belief differ in content from our original one, it will also differ in certainty. Our original belief was merely instinctive, and was at the mercy of any sceptical critic who chose to cast doubts on it. Berkeley has played this part. Our final belief is that part or that modification of our original one that has managed to survive his criticisms. This does not of course prove that it is true; there may be other objections to it. But, at any rate, a belief that has stood the criticisms of an acute and subtle thinker, like Berkeley, is much more likely to be true than a merely instinctive belief which has never been criticised by ourselves or anyone else. Thus the process which at first sight seemed to be merely circular has not really been so. And it has certainly not been useless; for it has enabled us to replace a vague belief by a clear and analysed one, and a merely instinctive belief by one that has passed through the fire of criticism

The above example will suggest to us a part at least of what philosophy is really about. Common-sense constantly makes use of a number of concepts, in terms of which it interprets its experience. It talks of *things* of various kinds; it says that they have *places* and *dates*, that they *change*, and that changes in one *cause* changes in others, and so on. Thus it makes constant use of such concepts or categories as thinghood, space, time, change, cause, etc. Science takes over these concepts from common-sense with but slight modification, and uses them in its work. Now we can and do *use* concepts without having any very clear idea of their meaning or their mutual relations. I do not of course suggest that to the ordinary man the words *substance*, *cause*, *change*, etc., are mere meaningless noises, like *Jabberwock* or *Snark*. It is clear that we mean something, and something different in each case, by such words. If we did not we could not use them consistently, and it is obvious that on the whole we do consistently apply and withhold such names. But it is possible to apply concepts more or less successfully when one has only a very confused idea as to their meaning. No man confuses place with date, and for practical purposes any two men agree as a rule in the places that they assign to a given object. Nevertheless, if you ask them what exactly they mean by *place* and *date*, they will be puzzled to tell you.

Now the most fundamental task of philosophy is to take the concepts that we daily use in common life and science, to analyse them, and thus to determine their precise meanings and their mutual relations. Evidently this is an important duty. In the first

place, clear and accurate knowledge of anything is an advance on a mere hazy general familiarity with it. Moreover, in the absence of clear knowledge of the meanings and relations of the concepts that we use, we are certain sooner or later to apply them wrongly or to meet with exceptional cases where we are puzzled as to how to apply them at all. For instance, we all agree pretty well as to the place of a certain pin which we are looking at. But suppose we go on to ask "Where is the image of that pin in a certain mirror, and is it in this place (whatever it may be) in precisely the sense in which the pin itself is in *its* place?" We shall find the question a very puzzling one, and there will be no hope of answering it until we have carefully analysed what we mean by *being in a place*.

Again, this task of clearing up the meanings and determining the relations of fundamental concepts is not performed to any extent by any other science. Chemistry *uses* the notion of substance, geometry that of space, and mechanics that of motion. But they assume that you already know what is meant by *substance* and *space* and *motion*. So you do in a vague way, and it is not their business to enter, more than is necessary for their own special purposes, into the meaning and relations of these concepts as such. Of course the special sciences do in some measure clear up the meanings of the concepts that they use. A chemist, with his distinction between elements and compounds and his laws of combination, has a clearer idea of substance than an ordinary layman. But the special sciences only discuss the meanings of their concepts so far as this is needful for their own special purposes. Such discussion is incidental to them, whilst it is of the essence of philosophy, which deals with such questions for their own sake. Whenever a scientist begins to discuss the concepts of his science in this thorough and disinterested way we begin to say that he is studying, not so much chemistry or physics, as the *philosophy* of chemistry or physics. It will therefore perhaps be agreed that, in the above sense of philosophy, there is both room and need for such a study, and that there is no special reason to fear that it will be beyond the compass of human faculties.

At this point a criticism may be made which had better be met at once. It may be said: "By your own admission the task of philosophy is purely verbal; it consists entirely of discussions about the meanings of words " This criticism is of course absolutely wide of the mark. When we say that philosophy tries to clear up the meanings of concepts we do not mean that it is simply concerned to substitute some long phrase for some familiar word. Any analysis, once it has been made, is naturally *expressed* in words, but so too is any other discovery. When Cantor gave his definition of *continuity*, the final result of his work was expressed by saying that you can substitute for the word "continuous" such and such a verbal phrase. But the essential part of the work was to find out exactly what properties are present in objects when we predicate continuity of them, and what properties are absent when we refuse to predicate continuity. This was evidently not a question of words but of things and their properties.

Philosophy has another and closely connected task. We not only make continual use of vague and unanalysed concepts. We have also a number of uncriticised beliefs, which we constantly assume in ordinary life and in the sciences. We constantly assume, e.g. that every event has a cause, that nature obeys uniform laws, that we live in a world of objects whose existence and behaviour are independent of our knowledge of them, and so on. Now science takes over these beliefs without criticism from common-sense, and

simply works with them. We know by experience, however, that beliefs which are very strongly held may be mere prejudices. ... Is it not possible that we believe that nature as a whole will always act uniformly simply because the part of nature in which the human race has lived has happened to act so up to the present? All such beliefs then, however deeply rooted, call for criticism. The first duty of philosophy is to state them clearly; and this can only be done when we have analysed and defined the concepts that they involve. Until you know exactly what you mean by *change* and *cause* you cannot know what is meant by the statement that *every change has a cause*. And not much weight can be attached to a person's most passionate beliefs if he does not know what precisely he is passionately believing. The next duty of philosophy is to test such beliefs, and this can only be done by resolutely and honestly exposing them to every objection that one can think of oneself or find in the writings of others. We ought only to go on believing a proposition if, at the end of this process, we still find it impossible to doubt it. Even then of course it may not be true, but we have at least done our best

These two branches of philosophy—the analysis and definition of our fundamental concepts, and the clear statement and resolute criticism of our fundamental beliefs—I call *critical philosophy*. It is obviously a necessary and a possible task, and it is not performed by any other science. The other sciences *use* the concepts and *assume* the beliefs, critical philosophy tries to analyse the former and to criticise the latter. Thus, so long as science and critical philosophy keep to their own spheres, there is no possibility of conflict between them, since their subject-matter is quite different. Philosophy claims to analyse the general concepts of substance and cause, e.g., it does not claim to tell us about particular substances, like gold, or about particular laws of causation, as that *agua regia* dissolves gold. Chemistry, on the other hand, tells us a great deal about the various kinds of substances in the world, and how changes in one cause changes in another. But it does not profess to analyse the general concepts of substance or causation, or to consider what right we have to assume that every event has a cause.

It should now be clear why the method of philosophy is so different from that of the natural sciences. Experiments are not made, because they would be utterly useless. If you want to find out how one substance behaves in presence of another you naturally put the two together, vary the conditions, and note the results. But no experiment will clear up your ideas as to the meaning of *cause* in general or of *substance* in general. Again, all conclusions from experiments rest on some of those very assumptions which it is the business of philosophy to state clearly and to criticise. The experimenter assumes that nature obeys uniform laws, and that similar results will follow always and everywhere from sufficiently similar conditions. This is one of the assumptions that philosophy wants to consider critically. The method of philosophy thus resembles that of pure mathematics, at least in the respect that neither has any use for experiment.

There is, however, a very important difference. In pure mathematics we start either from axioms which no one questions, or from premises which are quite explicitly assumed merely as hypotheses; and our main interest is to deduce remote consequences. Now most of the tacit assumptions of ordinary life and of natural science claim to be true and not merely to be hypotheses, and at the same time they are found to be neither clear nor self-evident when critically reflected upon. Most mathematical axioms are very simple and clear, whilst most other propositions which men strongly believe are highly complex

and confused. Philosophy is mainly concerned, not with remote conclusions, but with the analysis and appraisement of the original premises. For this purpose analytical power and a certain kind of insight are necessary, and the mathematical method is not of much use.

3. Critical vs speculative philosophy

Now there is another kind of philosophy; and, as this is more exciting, it is what laymen generally undertand by the name. This is what I call *speculative philosophy.* It has a different object, is pursued by a different method, and leads to results of a different degree of certainty from critical philosophy. Its object is to take over the results of the various sciences, to add to them the results of the religious and ethical experiences of mankind, and then to reflect upon the whole. The hope is that, by this means, we may be able to reach some general conclusions as to the nature of the universe, and as to our position and prospects in it.

There are several points to be noted about Speculative Philosophy.

(i) If it is to be of the slightest use it must presuppose critical philosophy. It is useless to take over masses of uncriticised detail from the sciences and from the ethical and religious experiences of men. We do not know what they mean, or what degree of certainty they possess till they have been clarified and appraised by critical philosophy. It is thus quite possible that the time for speculative philosophy has not yet come, for critical philosophy may not have advanced far enough to supply it with a firm basis. In the past people have tended to rush on to speculative philosophy, because of its greater practical interest. The result has been the production of elaborate systems which may quite fairly be described as moonshine. The discredit which the general public quite rightly attaches to these hasty attempts at speculative philosophy is reflected back on critical philosophy, and philosophy as a whole thus falls into undeserved disrepute.

(ii) At the best speculative philosophy can only consist of more or less happy guesses, made on a very slender basis. There is no hope of its reaching the certainty which some parts of critical phitosophy might quite well attain. Now speculative philosophers as a class have been the most dogmatic of men. They have been more certain of everything than they had a right to be of anything.

(iii) A man's final view of the universe as a whole, and of the position and prospects of himself and his fellows, is peculiarly liable to be biased by his hopes and fears, his likes and dislikes, and his judgments of value. . . . But, if we bear this in mind and try our hardest to be 'ethically neutral,' we are rather liable to go to the other extreme and entertain a theory of the universe which renders the existence of our judgments of value unintelligible

A large part of critical philosophy is almost exempt from this source of error Our analysis of truth and falsehood, or of the nature of judgment, is not very likely to be influenced by our hopes and fears. Yet even here there is a slight danger of intellectual dishonesty. We sometimes do our critical philosophy, with half an eye on our speculative philosophy, and accept or reject beliefs, or analyse concepts in a certain way, because we feel that this will fit in better than any alternative with the view of reality as a whole that we happen to like.

(iv) Nevertheless, if speculative philosophy remembers its limitations, it is of value to scientists, in its methods, if not in its results. The reason is this. In all the sciences except psychology we deal with objects and their changes, and leave out of account as far as possible the mind which observes them. In psychology, on the other hand, we deal with minds and their processes, and leave out of account as far as possible the objects that we get to know by means of them. A man who confines himself to either of these subjects is likely therefore to get a very one-sided view of the world. The pure natural scientist is liable to forget that minds exist, and that if it were not for them he could neither know nor act on physical objects. The pure psychologist is inclined to forget that the main business of minds is to know and act upon objects, that they are most intimately connected with certain portions of matter, and that they have apparently arisen gradually in a world which at one time contained nothing but matter. ... [We] can hardly avoid falling into some form of fallacy of over-simplification unless at some time we make a resolute attempt to think synoptically of all the facts. Our results may be trivial, but the process will at least remind us of the extreme complexity of the world, and teach us to reject any cheap and easy philosophical theory, such as popular materialism or popular theology.

4. Logic, ethics and psychology

Before ending ... I will say a word about the three [areas of enquiry] which are commonly thought to be specially philosophical. These are logic, ethics, and psychology.

Logic simply is the most fundamental part of critical philosophy. It deals with such concepts as *truth*, *implication*, *probability*, *class*, etc. In fact it may be defined as the science which deals with propositional forms, their parts, their qualities, and their relations. Its business is to analyse and classify forms, and to consider the formal relations that can subsist between them. Now all science *consists* of definite propositions, and each of these is of one of the forms which logic studies; but it is not the business of any other science explicitly to *discuss* propositional forms. Similarly all science is full of inferences, good and bad, and all inference depends on relations that are supposed to subsist between premises and conclusion. But it is for Logic, and for it alone, to decide what relations do in fact justify inference, and whether these relations do actually subsist in a given case. Thus logic is that part of critical philosophy which deals with the most general and pervasive of all concepts, and with those fundamental beliefs which form the "connective tissue" of all knowledge.

The greater part of ethics again is simply a branch of critical philosophy. It is a fact that we not only believe that such and such events happen, but that we also pass judgments of approval or disapproval on certain of them. Such judgments use peculiar concepts, like *good* and *bad*, *right* and *wrong*, *duty*, etc A very important part of Ethics is the attempt to analyse and define these peculiarly obscure notions which we all use so gaily in everyday life. Again, there are a great many judgments of value which many people assume as certain; e.g. 'pleasure is good', 'it is wrong to tell lies', 'a man has a right to do what he likes with his own', and so on. Another important part of ethics is the attempt to state such judgments clearly, and then to see what evidence, if any, there is

for them. Thus, ethics is that part of critical philosophy which analyses the concepts and criticises the presuppositions that we use in our judgments of approval and disapproval.

Psychology, as it seems to me, is not a part of philosophy at all, but is simply one of the special sciences. This is shown by the fact that, unlike logic and ethics, it argues inductively from experiment and observation. . . . [So] it should be asked why psychology has been supposed to be specially connected with philosophy. [Broad suggests that this is because psychological concepts like *mind*, *self*, *consciousness*, *sensation*, *perception*, etc. are particularly "confused and obscure" so that we find writers on psychology having to attempt to analyse and refine such concepts, and this means that psychology becomes entangled in some of the business of *critical* philosophy. Another reason for the interest in psychology is that a particular concern of speculative philosophy—as has already been suggested—is taking a synoptic view of the 'Mind and its Place of Nature', to use the title of another of Broad's books. And it is psychology which aims to tell us more about the murkier side of the Mind/Nature contrast, i.e. more about the mind whose place we have to try to elucidate in our speculative philosophy.]