# THE ANALYSIS OF MIND

THE ANALYSIS OF MIND. *By Bertrand Russell. 8vo. 310 pages. The Macmillan Company. $4.50.*

AMONG his many other distinguished accomplishments Mr Russell has learned unwittingly to do one thing that has been the despair of other philosophical writers and that is the way to baffle his critics. His rapid transitions from one scientific field to another can be followed only by the boldest of scholars. His familiarity with mathematics and mathematical logic will keep him from ever sharing the tea-room popularity of Bergson. He is the one modern philosophic writer who is as much at home in the principles underlying physics as in those that are basic to logic, metaphysics, and philosophy as a whole. English training and background somehow produce broader philosophical scholars than our American atmosphere. The present writer confesses his own inability adequately to review the present volume. All he can do is to single out bits of the book which he can understand and which interest him.

In The Analysis of Mind Mr Russell comes into closer contact with psychology than in any of his previous writings. He shows quite clearly that he has read much of American psychology. He is apparently in sympathy with the trend of psychology towards behaviourism—indeed behaviourism influences considerably the first half of his book. Behaviourism, it may be said in passing, is a movement in psychology which started eleven or twelve years ago. Its primary thesis is that psychology can be studied with accuracy only by observing *what other people do.* If its data were all at hand the behaviourist would be able to tell after watching the individual what the situation or stimulus is that caused his action (*prediction*): whereas if society decreed that the individual or group should act in a specific way the behaviourist could arrange the situation or stimulus which would bring such action about (*control*).

Mr Russell states in his preface that his book has grown out of an attempt to harmonize the behaviourist school of psychology which, as may be inferred, rejects the whole concept of consciousness, and the recent movement in physics initiated by Einstein and

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other exponents of the theory of relativity. The behaviourist school, according to Mr Russell, "make psychology increasingly dependent upon physiology and external observation, and tend to think of matter as something much more solid and indubitable than mind." The physicists, on the other hand, have been making matter less and less material. "Their world consists of 'events' from which 'matter' is derived by logical construction." Modern physics lends no support to old-fashioned materialism.

Putting it in terms that most of us can understand, Mr Russell attempts to answer the world-old question: What is it that characterizes mind as opposed to matter? How is psychology to be distinguished from physics? Without attempting at this point to follow Mr Russell through any of his intricate arguments we find that he solves the problem, for himself at any rate, by reaching the conclusion that psychological and physical phenomena are distinguished *by the nature of their causal laws.*

In the course of reaching this conclusion he modifies our concepts of both physics and psychology. Sensations for him are not necessarily conscious phenomena at all and are not necessarily psychological data, but common both to physics and psychology. *The only truly psychological subject matter is images.* The laws of their causation are different from those underlying sensation and are different from the laws that govern inert matter.

Up to this point the behaviourist and Mr Russell have travelled a common road chatting amicably together. Mr Russell suddenly begins to feel that the behaviourist is no longer an adequate companion and leaves him abruptly. The behaviourist feels no need of images either for memory or for thought—holding that the faint throat, chest, and laryngeal movements (movements used in speaking but too small to cause sound or to be objectively observed) actually constitute thought—recollection, conception, and imagery. In other words, that these acts differ from tennis playing only by virtue of the fact that the muscles that are at work are concealed from the observation of the observer. The behaviourist points out that this hypothesis is simpler than any other hitherto advanced—that it is adequate to account for all the problems which it is called upon to solve —that it has some support from experiment while the other views have not, and is in line with what we know of nervous system activity. Furthermore this hypothesis avoids the usual break between the

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data of physiology and those of psychology and throws out of count the very problem that Mr Russell sets himself to solve, namely, the relation of mind to matter. For behaviourism this problem becomes a purely artificial problem. In his preface Mr Russell says psychology on this basis is materialistic. The behaviourist's answer is that it does not concern him. The behaviourist and the physicist, so far as they use scientific methods, work equally under any metaphysical régime be it idealism, materialism, or realism.

Almost at the point where Mr Russell leaves the broad highway of the physical sciences he slips rapidly into the old slough of despond—subjectivism—at least so far as his method is concerned. Thus, when he begins to look for imagery, recollection, memory, belief, and meaning he finds them, of course, because, having made use of the assumption of the introspectionists, even the self-limited ones like Mr Russell, he has put these things "under the piano" before he began to look there. On page 27 he is candid and brave enough to say after describing what some of the behaviourists say about the identity of thought and language: "It is humiliating to find how terribly adequate this hypothesis turns out to be." We are deeply disappointed that he finally decided to withdraw from our company but we feel that his defection is due to the fact that his training and habits of mind keep him turned to the notion of the image and are far stronger than any logical need for it on his part. All philosophy, logic, and epistemology is shot through with this notion. To give it up means scrapping many if not all of our present philosophical formulations. The destruction seems like vandalism and Mr Russell, I believe, temporizes by clinging to the image.

If he had been willing to live behaviourism for two years, working on its hypothesis he would have given us we believe a metaphysical science that would have included all of the behaviouristic tenets. This metaphysical task must and will be done by someone—and preferably by Mr Russell. Had he done this the behaviouristic school would have been more grateful to him even than they now are for being the first philosopher to yield them their place in the sun.

Mr Russell has always been progressive enough to change his views when he felt that a change was in line with progress. Has something new been discovered about the image (the basis on his view really of thought, memory, meaning, belief, et cetera) which has so enhanced its importance that he is willing to set it aside as be-

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longing to a purely mental realm with laws all of its own? To answer this let us glance for a moment at how sensations are caused.

On the law of causation of sensations he quotes Stout: "One characteristic mark of what we agree in calling sensation is its mode of production. It is caused by what we call a stimulus. A stimulus is always some condition external to the nervous system itself and operating upon it." "I think," says Mr Russell, "that this is the correct view and that this distinction between images and sensations can be made by taking account of their causation." Sensations as we know come through the sense organs, while images do not. According to our author we cannot have visual sensations in the dark. Thus sensations have an exciting cause but images do not necessarily. On the question as to whether they have not a centrally exciting cause through cortical stimulation (that is through activity initiated in the brain and not by a sense organ) Mr Russell says this is assuming more than is necessary because it takes for granted (page 150) that an image must have a proximate physiological cause. He admits that this may be true, but he prefers to say that images have *mnemic* causes. He illustrates this: if you listen to a man playing the pianola without looking at him you will have images of his hands on the keys as if he were playing the piano; if you suddenly look at him while you are absorbed in the music, you will experience a shock of surprise when you notice that his hands are not touching the keys. You are here in the region, so far as the production of images is concerned, of mnemic causation as opposed to ordinary physical causation. Sensations on the other hand will have only physical causes. The prevailing school in psychology, the parallelists (Titchener, Angell, Pillsbury) hold that brain modifications or patterns laid down by perceptual activity when aroused by whatever means are accompanied by appropriate images. Mr Russell is not willing to admit the necessity of such a hypothesis, at least until the evidence grows stronger.

The behaviourist at this point would like to register a protest against Mr Russell's reasoning on the image. He believes that he can show that what Mr Russell and most psychologists call the "image" has a definite proximate physical cause as truly as does "sensation." While he has not definitely formulated his position on the image up to now except to deny it in the sense in which it is supposed to exist, that is, as a centrally aroused process, he has no trouble in finding a means for providing an actual *visual stimulus* as part

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of the complex of stimuli which arouse a total reaction to an object not present to the senses. Dunlap, although not a behaviourist, first pointed to the way by claiming that the so-called visual image is only an associated eye muscle strain (muscular "sensation"). In other words, when you are thinking of a definite object (not present to the senses) which the eye has been trained on, "imaging" it, the eye muscle adjustment takes place actually (though faintly) as though you were seeing the object. The behaviourist without giving up his premises—to the effect that a sense organ stimulus is always present in any reaction—admits the associated muscular adjustment of Dunlap and also conditioned reflex eye muscle responses (which may have a different origin from the associated) and if necessary can go still further and say that the associated and conditioned reflex muscular responses in the eye may bring about just enough tension upon the eyeball, and hence upon the retina, to start faint retinal activity. It is well known that phosphenes, rings of light, "stars," flashes of light, can be produced by pressure and by electric stimulation of the eye. The behaviourist can go still further and maintain that in a normal person the retina is a sense organ of such delicate chemical and physical structure and balance that optical sensory impulses are always passing towards the brain. He might even argue that centrifugal nerve fibres keep the retina constantly stirred up and supplement in this respect the work done by associated eye muscle responses in causing the arousal of actual retinal impulses.

In other words, on the behaviourist's hypothesis, the cause of the "image" falls under Mr Russell's definition, quoted from Stout: it has a perfectly good stimulus external to the nervous system and acting upon it. So if he grants this he must admit that there is no purely mental world only the world of "sensation" which is common property both to physics and psychology—the *neutral stuff* out of which both are constructed (Holt). This would throw him back upon his old position, namely that of the realist, since he admits that he is a realist with respect to sensation.

But as we have seen, Mr Russell refuses to admit that there is an external stimulus in the case of the image. So, far from helping the behaviourist, he rather has made his road more difficult by throwing the weight of his undoubted authority on the side of the existence of this image, which like Banquo's ghost will not submit to a quiet and permanent burial.

What does Mr Russell mean by *mnemic causation*, which is a men-

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tal law? Merely that the "burnt child dreads the fire." In other words, whenever in order to explain a present reaction (presence of image, memory, or even where sensation details are filled) you have to take account of the past history of the organism, you have an example of mnemic phenomena. Past occurrences in addition to the present stimulus and the present ascertainable condition of the organism enter into the causation of the present response. Given A, B, and C in the past, together with X now; cause Y now. A, B, and C are the mnemic cause, whereas X is the present occasion or stimulus. Recollection is the clearest case of it in man. A present stimulus leads you to recollect certain occurrences. There is nothing in our minds when the recollection is not occurring to show that we have such memories. We say they are *latent*. The question is sometimes put in this way: where are our memories of childhood when we are not actually remembering them? Psychologists hitherto have fallen back upon the view that when we are seeking a cause for the order and arrangement of our ideas or images we have to go back to matter, namely modifications laid down in the nervous system.

Mr Russell admits this may be true but he says it is a pure assumption. If it is true the brain of a man who has seen New York must differ from that of the man who has only seen pictures of it.

Such a line of argument as Mr Russell uses here is a strange one to a laboratory man. So far does he carry his hypothesis that he finally says: "But the evidence seems so far from conclusive that I do not think we ought to forget the other hypothesis, or to reject entirely the possibility that mnemic causation may be the ultimate explanation of mnemic phenomena." If Mr Russell means what I think he means here he is not so far away from Berkeley as he supposes. Possibly a better way to put it is that he is a psychophysical parallelist with *the physiological parallel largely if not entirely suppressed*. I say this with some hesitation since the author expressly denies the usefulness of parallelism.

Everyone who reads the book is impressed by the fact that Mr Russell's mind is in a transitional stage. His mind is so open that the behaviourists have hopes of convincing him that he is wrong about the image. Having done so, they further hope that when he comes to write his "true metaphysic" he will take them along with him to the journey's end.

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