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Author(s): William James

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A PLEA FOR PSYCHOLOGY AS A 'NATURAL SCIENCE.'

IN the first number of this journal, Professor Ladd takes my *Principles of Psychology* as a text for certain critical reflections upon the cerebralistic point of view which is becoming so popular in psychology to-day. I appreciate fully the kind personal tone of the article, and I admit that many of the thrusts strike home, though it shocks me a bit, I confess, to find that in some particulars my volumes have given my critic so false an impression of my beliefs. I have never claimed, for instance, as Professor Ladd seems to think I claim, that psychology as it stands to-day, *is* a natural science, or in an exact way a science at all. Psychology, indeed, is to-day hardly more than what physics was before Galileo, what chemistry was before Lavoisier. It is a mass of phenomenal description, gossip, and myth, including, however, real material enough to justify one in the hope that with judgment and good-will on the part of those interested, its study may be so organized even now as to become worthy of the name of natural science at no very distant day. I hoped that my book would leave on my readers an impression somewhat like this of my own state of mind. I wished, by treating Psychology *like* a natural science, to help her to become one. But what one book may have said or not said is a matter of small moment. My two volumes are doubtless uncouth enough; and since Professor Ladd wrote his article my general position has probably been made more clear in the abridgement of them, which Messrs. Holt & Co. have recently published under the name of 'Psychology: Briefer Course.'¹ Let us drop the wearisome book, therefore, and turn to the question itself, for that is what we all have most at heart.

¹ See especially the chapters headed 'Introductory' and 'Epilogue.'

What may one lawfully mean by saying that Psychology ought to be treated after the fashion of a 'natural science'? I think that I can state what I mean; and I even hope that I can enlist the sympathy of men like Professor Ladd in the cause, when once the argument is fairly set forth.

What is a natural science, to begin with? It is a mere fragment of truth broken out from the whole mass of it for the sake of practical effectiveness exclusively. *Divide et impera*. Every special science, in order to get at its own particulars at all, must make a number of convenient assumptions and decline to be responsible for questions which the human mind will continue to ask about them. Thus physics assumes a material world, but never tries to show how our experience of such a world is 'possible.' It assumes the inter-action of bodies, and the completion by them of continuous changes, without pretending to know how such results can be. Between the things thus assumed, now, the various sciences find definite 'laws' of sequence; and so are enabled to furnish general Philosophy with materials properly shaped and simplified for her ulterior tasks. If, therefore, psychology is ever to conform to the type of the other natural sciences, it must also renounce certain ultimate solutions, and place itself on the usual common-sense basis by uncritically begging such data as the existence of a physical world, of states of mind, and of the fact that these latter take cognizance of other things. What the 'physical world' may be in itself, how 'states of mind' can exist at all, and exactly what 'taking cognizance' may imply, are inevitable further questions; but they are questions of the kind for which general philosophy, not natural science, is held responsible.

Now if there is any natural science in possession of a subject-matter well set off and contrasted with all others, it is psychology. However much our self-consciousness, our freedom, our ability to conceive universals, or what not, may ally us with the Infinite and Absolute, there is yet an aspect of our being, even of our mental being, which falls wholly within the sphere of natural history. As constituting the inner life of individual persons who are born and die, our conscious states are temporal

events arising in the ordinary course of nature, — events, moreover, the conditions of whose happening or non-happening from one moment to another, lie certainly in large part in the physical world. Not only this; they are events of such tremendous practical moment to us that the control of these conditions on a large scale would be an achievement compared with which the control of the rest of physical nature would appear comparatively insignificant. All natural sciences aim at practical prediction and control, and in none of them is this more the case than in psychology to-day. We live surrounded by an enormous body of persons who are most definitely interested in the control of states of mind, and incessantly craving for a sort of psychological science which will teach them how to *act*. What every educator, every jail-warden, every doctor, every clergyman, every asylum-superintendent, asks of psychology is practical rules. Such men care little or nothing about the ultimate philosophic grounds of mental phenomena, but they do care immensely about improving the ideas, dispositions, and conduct of the particular individuals in their charge.

Now out of what may be called the biological study of human nature there has at last been precipitated a very important mass of material strung on a guiding conception which already to some degree meets these persons' needs. The brain-path theory based on reflex action, the conception of the human individual as an organized mass of tendencies to react mentally and muscularly on his environment in ways which may be either preservative or destructive, not only helps them to analyze their cases, but often leads them to the right remedy when perversion has set in. How much more this conception may yet help them these men do not know, but they indulge great hopes. Together with the physiologists and naturalists they already form a band of workers, full of enthusiasm and confidence in each other, and are pouring in materials about human nature so copious that the entire working life of a student may easily go to keeping abreast of the tide. The 'psychical researchers,' though kept at present somewhat out in the cold, will inevitably conquer the recognition which their labors also deserve, and

will make, perhaps, the most important contributions of all to the pile. But, as I just remarked, few of these persons have any aptitude or fondness for general philosophy; they have quite as little as the pure-blooded philosophers have for discovering particular facts.

The actual existence of two utterly distinct types of mind, with their distinct needs, both of them having legitimate business to transact with psychology, must then be recognized; and the only question there can be is the practical one of how to distribute the labor so as to waste it least and get the most efficient results. For my part, I yield to no man in my expectations of what general philosophy will some day do in helping us to rational conceptions of the world. But when I look abroad and see how almost all the fresh life that has come into psychology of recent years has come from the biologists, doctors, and psychical researchers, I feel as if their impulse to constitute the science in their own way, as a branch of biology, were an unsafe one to thwart; and that wisdom lies, not in forcing the consideration of the more metaphysical aspects of human consciousness upon them, but, on the contrary, in carefully rescuing these aspects from their hands, and handing them over to those of the specialists in philosophy, where the metaphysical aspects of physics are already allowed to belong. If there could be, after sufficient ventilation of the subject, a generally expressed consent as to the kind of problems in psychology that were metaphysical and the kind that were analogous to those of the natural sciences, and if the word 'psychology' could then be restricted so as to cover as much as possible the latter and not the former problems, a psychology so understood might be safely handed over to the keeping of the men of facts, of the laboratory workers and biologists. We certainly need something more radical than the old division into 'rational' and 'empirical' psychology, both to be treated by the same writer between the covers of the same book. We need a fair and square and explicit *abandonment* of such questions as that of the soul, the transcendental ego, the fusion of ideas or particles of mind stuff, *etc.*, by the practical man; and a fair and square

determination on the part of the philosophers to keep such questions out of psychology and treat them only in their widest possible connections, amongst the objects of an ultimate critical review of all the elements of the world.

Professor Andrew Seth has put the thing excellently in his late inaugural address at Edinburgh, on the Present Position of the Philosophical Sciences.¹ "Psychology," he says, "has become more scientific, and has thereby become more conscious of her own aims, and at the same time, of her necessary limitations. *Ceasing to put herself forward as philosophy*, she has entered upon a new period of development as science; and, in doing so, she has disarmed the jealousy, and is even fast conquering the indifference, of the transcendental philosopher." Why should not Professor Ladd, why should not any 'transcendental philosopher,' be glad to help confirm and develop so beneficial a tendency as this? In Professor Ladd's own book on *Physiological Psychology*, that "real being, proceeding to unfold powers that are *sui generis*, according to laws of its own," for whose recognition he contends, plays no organic part in the work,² and has proved a mere stumbling-block to his biological reviewers. Why force it on their attention, and perpetuate thereby a sort of wrangle from which physics and chemistry have long since emerged, and from which psychology, if left to the 'facts of experience' alone, promises so soon to escape?

Now the sort of 'fact of experience' on which in my book I have proposed to compromise, is the so-called 'mental state,' in whose existence not only common men but philosophers have uniformly believed. Whatever conclusions an ultimate criticism may come to about mental states, they form a practically

¹ Blackwood, 1891.

² I mean that such a being is quite barren of particular consequences. Its character is only known by its reactions on the signals which the nervous system gives, and these must be gathered by observation after the fact. If only it were subject to successive reincarnations, as the theosophists say it is, so that we might guess what sort of a body it would unite with next, or what sort of persons it had helped to constitute previously, those would be great points gained. But even those gains are denied us; and the real being is, for practical purposes, an entire superfluity, which a *practical* psychology can perfectly well do without.

admitted sort of object whose habits of coexistence and succession and relations with organic conditions form an entirely definite subject of research. Cannot philosophers and biologists both become 'psychologists' on this common basis? Cannot both forego ulterior inquiries, and agree that, provisionally at least, the mental state shall be the ultimate datum so far as 'psychology' cares to go? If the 'scientific monists' would only agree to say nothing of the states being produced by the integration and differentiation of 'psychic units,' and the 'transcendental metaphysicians' agree to say nothing of their being acts of spiritual entities developing according to laws of their own, peace might long reign, and an enormous booty of natural laws be harvested in with comparatively no time or energy lost in recrimination and dispute about first principles. My own volumes are indeed full of such recrimination and dispute, but these unfortunate episodes are for the most part incidental to the attempt to get the undivided 'mental state' once for all accepted by my colleagues as the fundamental datum for their science. To have proposed such a useful basis for united action in psychology is in my own eyes the chief originality and service of the book; and I cannot help hoping that Professor Ladd may himself yet feel the force of the considerations now urged. Not that to-day we *have* a 'science' of the correlation of mental states with brain-states; but that the ascertainment of the laws of such correlation forms the *program* of a science well limited and defined. Of course, when such a science is formed, the whole body of its conclusions will fall a prey to philosophical reflection, and then Professor Ladd's 'real being' will inevitably have the best possible chance to come to its rights.

One great reason why Professor Ladd cares so little about setting up psychology as a natural science of the correlations of mental with cerebral events, is that brain-states are such desperately inaccessible things. I fully admit that any *exact* account of brain states is at present far beyond our reach; and I am surprised that Professor Ladd should have read into my pages the opinion that psychology as a natural science must aim at an account of brain states exclusively, as the correlates of states of

mind. Our mental states are correlated *immediately* with brain states, it is true; but, more remotely, they are correlated with many other physical events, peripheral nerve currents for example, and the physical stimuli which occasion these. Of these latter correlations we have an extensive body of rather orderly knowledge. And, after all, may we not exaggerate the degree of our ignorance of brain states themselves? We don't know exactly what a nerve current is, it is true; but we know a good deal *about* it. We know that it follows a path, for instance, and consumes a fraction of a second of time in doing so. We know that, physically considered, our brain is only a mass of such paths, which incoming currents must somehow make their way through before they run out. We even know something about the consciousness with which particular paths are specially 'correlated,' those in the occipital lobes, *e.g.*, being connected with the consciousness of *visible* things. Now the provisional value of such knowledge as this, however inexact it be, is still immense. It sketches an entire programme of investigation, and defines already one great *kind* of law which will be ascertained. The *order in time* of the nerve currents, namely, is what determines the *order in time*, the coexistences and successions of the states of mind to which they are related. Professor Ladd probably does not doubt the nerve-current theory of motor habits; he probably does not doubt that our ability to learn things 'by heart' is due to a capacity in the cerebral cortex for organizing definitely successive systems of paths of discharge. Does he then see any radical reason why the *special time-order* of the 'ideas' in any case whatever of 'association' may not be analogously explained? And if not, may he not go on to admit that the most characteristic features of our faculty of memory,¹ of our perception of outer things,² of our liability to illusion,³ *etc.*, are most plausibly and naturally explained by acquired organic

¹ Such as the need of a 'cue'; the advantages, for recall, of repetition and multiple association; the fact of obliviscence, *etc.*

² That the ideas of all the thing's attributes arise in the imagination, even when only a few of them are felt, *etc.*

³ That, *e.g.*, the most *usual* (and therefore *probable*) associates of the present sensation are mentally imagined even when not actually there.

habitudes, stamped by the order of impressions on the plastic matter of the brain? But if he will admit all this, then the diagrams of association-paths of which he preserves so low an opinion are not absolutely contemptible. They do represent the *sort* of thing which determines the order of our thoughts quite as well as those diagrams which chemists make of organic molecules represent the sort of thing which determines the order of substitution when new compounds are made.

It seems to me, finally, that a critic of cerebralism in psychology ought to do one of two things. He ought either to reject it in principle and entirely, but then be willing to throw over, for example, such results as the entire modern doctrine of aphasia—a very hard thing to do; or else he ought to accept it in principle, but then cordially admit that, in spite of present shortcomings, we have here an immense opening upon which a stable phenomenal science must some day appear. We needn't pretend that we have the science already; but we can cheer those on who are working for its future, and clear metaphysical entanglements from their path. In short, we can aspire.

We never ought to doubt that Humanity will continue to produce all the types of thinker which she needs. I myself do not doubt of the 'final perseverance' or success of the philosophers. Nevertheless, if the hard alternative were to arise of a choice between 'theories' and 'facts' in psychology, between a merely rational and a merely practical science of the mind, I do not see how any man could hesitate in his decision. The kind of psychology which could cure a case of melancholy, or charm a chronic insane delusion away, ought certainly to be preferred to the most seraphic insight into the nature of the soul. And that is the sort of psychology which the men who care little or nothing for ultimate rationality, the biologists, nerve-doctors, and psychical researchers, namely, are surely tending, whether we help them or not, to bring about.

WILLIAM JAMES.

HARVARD UNIVERSITY.