

July 1941

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Recommended Citation

Barker, Warren J. (1941) "The Structure and Function of Mind in Behaviorism," *The Linacre Quarterly*: Vol. 9: No. 3, Article 2.
Available at: <http://epublications.marquette.edu/lnq/vol9/iss3/2>

THE STRUCTURE AND FUNCTION OF MIND IN BEHAVIORISM

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"We know not what the morrow may bring" was a very judicious sentence in a recent review on Mr. Harvey Wickham's "Misbehaviorists." Little did Descartes dream what the morrow in the philosophical world would bring when he withdrew his allegiance from scholastic doctrine. What great minds for centuries had meditated upon, regarded from every angle, and then proclaimed and defended as true doctrine was rejected by this sceptical and innovating mind. Still holding to the Church's fundamental doctrine he undermined and weakened their substrata, and thus opened the flood gates of modern errors. In substituting the absolute spiritualism, a dualistic spiritualism, of Plato, thereby establishing at the outset of the modern period an altogether unnecessary antagonism between spiritualism and empiricism Descartes eventually drove the empirical psychologists to adopt the materialistic concept of the soul as the only concept which justified the study of the correlation between psychic phenomena and physiological processes. It was a short and inevitable step, thenceforth, to utter denial of the soul. Locke, an apt pupil of Descartes, still maintained its spirituality, though his premises, had he logically followed them, would have led him to Materialism. Hume

drew the logical conclusions and left to posterity not a spiritual, substantial soul, but a mere conglomerate of phenomena. From Hume to the present day the idea of soul has become lost in the maze of illogical reasoning that characterizes modern philosophy. Psychology, strange to say, became in time the fondled child of this modern reasoning, but their unenlightened intellects saw not the lifelessness of the corpse they caressed, for it was a Psychology without a soul. Even stranger to say, they saw not the inconsistency in postulating of this child both intellect and consciousness.

A bomb was thrown into the camp of the staid modern philosophers of the type of James at about the beginning of the twentieth century by a strange and bolshevistic group of men, calling themselves Behaviorists. They saw the inconsistency of admitting intellect and consciousness and denying the soul. They stood at the cross-roads, one leading to Scholasticism, the other to utter and gross materialism. It was to the latter that their bolshevistic tendencies led them. A purely mechanical or neural explanation of all actions of man, both rational and irrational, became the result. Intellect was discarded to the ash-heap, together with everything that smacked of the immaterial.

Consciousness became a bone of contention, some retaining it, others rejecting it, thus splitting the behaviorists into opposing camps.

About the middle of the thirteenth century, in a poor, rough cell sat a monk in the robe of the Dominicans. A manuscript lay before him, the quill rested in his fingers, his head was bent down in deep meditation; the title of the page he had just written was "De Anima." The conclusion of his meditation was "Anima humana, cum sit omnium corporum cognoscitiva, est incorporea et subsistens." Seven centuries later, in 1903, a young professor of Johns Hopkins University, rejecting the result of centuries of profound thought and mental labor, casting aside unchanging principles culled from human experience of three thousand years or more, blinding himself to their logical deductions, formulates a new human psychology based upon his experiments with blind, anosmic white rats. And this is what the philosophical morrow brought. Dr. Watson calls his psychology Behaviorism claiming the freak his progeny. This memorable event we shall describe in Dr. Watson's own words—an event that shall go down in history as the beginning of a movement to destroy morality, and all that is rational in man, to degrade him to the level of beasts and machines, to retrovert the order of civilization:

"I think it was in 1903, when watching blind, deaf, and anosmic white rats running around a com-

plicated maze to get food, that I first began to formulate a psychological point of view, which has come to be called Behaviorism. My thinking then ran like this: 'If I can write a psychology about white rats—rats that cannot speak, that cannot introspect, or cannot make known to me in any way that they have a mind and consciousness—and if in my psychology of rats there is a reasonable completeness and thoroughness, why not write a human psychology along the same lines? The only data I can base my rat psychology upon I get by watching them behave, when hungry, when cold and wet, when sex stimuli are present, when other animals attack them, when they have young in the nest, etc. Man is an animal just like the rat, only more complicated because he has learned a new form of behavior; that is, how to speak. Why not look upon him as an animal—but as a talking animal—but just because he can talk, aloud and to himself (think), do not let us make a mystery of this novel form of behavior and assume that there is some kind of new essence which must be called "consciousness" or "mind." Let us then in this psychology of man proceed along biological lines. Let us alter situations and watch him behave, putting down just what we can see. This method will give us a genuine objective psychology.'

"This vague day dream when worked out became 'Behaviorism.'"

This system when first appearing in the psychological journals excited a flood of controversy. Its popularity increased in proportion with the public interest in that magic word "psychology." The naïveté of the man is seen in his exploitation of the ignorance of the masses by the frequent occurrence of the words "factual psychology," "psychology based upon science"—popular phrases of the day. His absurdities he clothes with a film of logic and trusts to the credulity of the popular mind to accept his broad, flat, unproved and unprovable statements. Men may be blinded by this system which would flatter sexual instincts, or may be swamped by the detailed physiological explanations. His conclusions alone should reveal the hidden asp beneath his flowered words, for to the thinking and honorable they are as nauseating as they are bold. The learned doctor has found neither mind nor consciousness in his laboratories—a wonderful discovery—and flatters us by telling us that we have been laboring under a delusion for centuries that we possess an intellect and are higher than the beast and the inanimate things about us. We have waited these centuries for a Dr. Watson to put us right. We have altogether too exalted an idea of ourselves. The boy or girl is now to realize that the mother whom he or she has loved dearly is just slightly more evolved than the pig in their backyard. In fact when the new be-

havioristic ethics are formulated it may be found better that children should never know their parents nor experience their fond affection. The young couple setting out on their happy married life see in each other only machines, a bundle of reflexes, and their beautiful love is only a conditioning of the nerves in response to sex stimuli. All of which is exceedingly flattering to the human race.

We shall now proceed to explain as briefly as possible without sinning against lucidity, this strange and repulsive system. It is, as Morton Prince of Harvard defines it,

"A system that attempts to explain human (and of course animal) needs, motives, desires, impulses, emotions, thought—in short conscious activity and the resulting (as commonly supposed) bodily activity in terms of the neural and glandular processes correlated with the former and of the bodily motor behavior which they admittedly induce."

(Powell lecture at Clark Univ., Detroit)

To Dr. Watson we must turn for his own peculiar definition of this new psychology. He proclaims it in his article "What Is Behaviorism," appearing in the April, 1928 issue of the *Golden Book Magazine*:

"a natural science that takes the whole field of human adjustments as its own. Its

closest scientific companion is physiology. . . . It is different from physiology only in the grouping of its problems, not in fundamentals or in central view-point. Physiology is particularly interested in the functioning of parts of the animal—e.g., its digestive system, the circulatory system, the nervous system, the excretory systems, the mechanics of neural and muscular response. Behaviorism, on the other hand, while it is intensely interested in the functioning of all these parts, is intrinsically interested in what the whole animal will do from night to morning.”

The behaviorist begins his study of human behavior in the laboratory and restricts his experiments mostly to the child of tender age. Those actions which the child exhibits immediately after birth, before trained by nurse or mother, he has come to call “man’s unlearned or unconditioned behavior.” They vary from mere breathing and heart-beating to crying and crawling. From these primary sources of behavior develops the complex behavior of the child’s later life with his skill in various arts or professions by a grafting on of unnatural stimuli which call forth the same response as the natural. These responses, then, become “man’s learned or conditioned behavior.”

On this idea of reflex action to stimuli Dr. Watson builds his whole psychological system. Start-

ing with the premise that “The behaviorist finds no ‘mind’ in his laboratories, sees it nowhere in his subject” he establishes the thesis that “our thinking processes are no different in essence from tennis-playing, swimming, or any other activity,” which he proceeds to prove by an elaborate and detailed psychological explanation of man’s cerebral and neural construction and function.

Dr. Watson divides our bodies into three groups or parts, according to functions—receptors, conductors, and effectors. The receptors receive impressions from the outer world and are nothing but our old friends, the senses, ears, eyes, etc. The conductors are the nerves. The effectors, or the bringers about of effects, are the muscles and glands. The behaviorist calls whatever happens to a victim of an experiment the “stimulus” or “response.” So we shall imagine a stimulus of some sort, let us say, the spectacle of Eliza crossing on the ice—impinges upon a receptor—in this instance the retina. The conductor takes the matter and transmits this, an impulse—in the form of a wave of chemical composition—to the brain. Here it encounters a number of cells called neurones. A neurone under the microscope looked something like a bush that had been pulled up by the roots. The ball of earth adhering to it represents the muscles, or braincell proper. The branches are dendrites, and in the human body they extend from

sometimes less than a millimeter to more than a yard in length—becoming what is known to the ordinary man as nerves. Each nucleus possesses several, sometimes a great number of dendrites, and it is through these that it receives the neural or nervous impulse which it passes on through its axone to the next cell.

We have millions of these neurones, so complicated that even the neurologist dares not delve into that awful tangle of vaguely definable structure. It is well to note that neurones are of three sorts, receiving, association, and sending neurones. But out of fairness to Dr. Watson it should be said that he calls them nothing of the sort. In fact he thinks that "entirely too much" has been made of the association neurone, and of the "whole localization of function." The brain is not popular with the behaviorists anywhere, for sometimes it shows a tendency to upset their most cherished theories. Nevertheless the brain is there, and the brain sees Eliza crossing the ice. How? Through the receiving neurones, But the picture is like one of these very modern pictures sent out by telegraph, for all it receives or passes on is a series of shocks, or "waves of chemical decomposition." The association neurone having possessed itself of the picture, relays it in turn to the third or sending neurones which are in touch with the muscles and glands. The truth is not quite so simple as this. There are probably nine

million neurones to begin with, each supplied with numerous arms. Any association neurone appears to be able to get in touch with any other neurone in either of the other two classes, and even the simplest picture or bit of information must manifest itself to an unconscionable number of waves or impulses, each one quite meaningless in itself. What a wild tumult of activity must be taking place within us when the battle outside waxes hot.

But we cannot always be thinking of neurones individually, so we think of them in chains. When two get in touch with each other (through the axone of the one and the dendrite of the other), the connection is called a synapse. When the chain includes all three sorts of neurones, it is called a reflex arc.

A reflex is what happens when you strike the patellar tendon of the knee with the side of the hand, or with a tack-hammer. The leg registers a kick, because the blow sets up a wave of chemical decomposition in the dendrites of the receiving neurones which are nearest concerned; the wave passes to certain association neurones, and by them is passed to the kicking muscle. That is, it passes through a reflex arc, one of the several reflex arcs which are already in working order when we are born. So this reflex arc is called "unconditioned," and the stimulus which sets it in motion is said to be the "natural" stimulus. By stimulus Watson means any ob-

ject in the general environment, or any change in the tissues themselves due to the physiological condition of the animal, while by response he means anything the animal does—such as turning towards or away from the light, jumping at a sound, and more highly organized activities such as building a skyscraper, drawing plans, writing books, and the like.

But these unconditioned responses would not have served to explain all the complicated actions of man, so he postulates another—the conditioned reflex or man's learned behavior. It is the grafting of unnatural or substituted stimuli—which becomes the superstructure of education. To take examples, it is possible, we find, to get a reflex to respond to a stimulus which is not its "natural" stimulus. Food, for example, is the natural stimulus of the reflex arc operating the salivary glands. The mouth waters when we begin to eat, but the Russian, Pavlov, bored holes into the cheeks of a dog, brought the salivary ducts into the open, and discovered that not only would the dog's mouth water at the contact of food, but it also waters at the mere sight of food. Then he rang a bell for several days at feeding time, and had the satisfaction eventually of seeing the dog's mouth water at the sound of the bell though no food was anywhere about. This, according to Prof. Watson, was the grafting on of "unnatural" stimulus or conditioned response or learned behavior. We know now

from his wonderful experiments that we can obtain knee jerks by blowing a whistle, or cause the iris to contract at the smell of afeotida. We have but to flash a bright light every time the herb is brought into the vicinity, or associate whistles with tack-hammers in the neurones of the subject.

One more item and the foundation of psychology, that is, the mechanical foundation, from the standpoint of Behaviorism, will be complete. All emotions, claims the Behaviorist, can be reduced to three—fear, rage, and love. Now, by experiment upon babies Dr. Watson proves that the human is born with only one fear, the fear of loud noises. All others are conditioned emotional responses. He takes a rat, and every time the child goes to touch it the experimenter strikes a steel bar behind the child's head. The child seems to associate the rat with the loud noise, and soon every time the rat is produced there is a shrinking away from the animal. Just as the ringing of the bell having been often associated with food will cause the salivary glands of the dog to excrete saliva, so the noise having been associated with the rat, the very sight of the rat causes fear in the child. Again love is very easily, and as he thinks, sufficiently explained in the same way. The mother by petting and rocking the baby has called forth the response of love. Now the response in the baby becomes

conditioned so that even the sight of the mother will call forth the same response, namely love. Thus are emotional responses conditioned.

This is psychology from the standpoint of the Behaviorist. From the standpoint of a psychologist it looks as if all trace of psychology has thus far been carefully left out, for psychology is the study of the psyche, the soul, the conscious self or that

part of the self which has at least the capacity of becoming conscious. Dr. Watson says not. He thinks psychology is the study of the reaction-mass. Anyway, he is convinced that reaction-mass psychology is all the psychology that is needed to explain everything. "The behaviorist asks for nothing to start with in building a human being but the squirmings everyone can see in the new-born infant."

[To be concluded]

Native Sisters

For several years the Society of Catholic Medical Missionaries has shared in the responsibility and privileges of training native sisters. In 1936 Sister M. Lactitia paid a visit to Dacca, Bengal. While there she met the Associates of Mary, a native community started some ten years ago under the auspices of the Holy Cross Sisters. She was impressed by the happy, intelligent faces and trim appearance of these native sisters, and had the inspiration to offer them a nurses' training in our own hospital in Rawalpindi, North India.

This offer was accepted promptly, and fifteen young Bengali Sisters travelled to the far north of India, which was like a foreign country to them. Strange food, a different language, and a trying climate tested and proved their sturdy missionary spirit. They persevered valiantly, and of the first group who graduated, one received the annual government medal for the highest marks.

They are back in their native Bengal and have opened a dispensary in Rangamattia, supplying skilled nursing care where there was none before.

This first success gave us courage to accept two other groups of native sisters for similar training, including midwifery. Moreover, on Pentecost 1940, a band of young Indian girls from Malabar started on their long journey to Rawalpindi, to study nursing and afterwards to be formed into a native branch of the Medical Mission Sisters. These girls come from old Catholic families, the so-called "St. Thomas Christians", and they have an excellent education. Their charming manners and keen minds give great promise for the future, when, as full-fledged Indian Medical Mission Sisters, they will be prepared to nurse the sick poor of their own people.

—Society of Catholic Medical Missionaries.