Respondent behavior

Psychology, Behaviorism

The name respondent has been given to stimulus-elicited behavior so as to contrast it with behavior for which no stimuli can be identified. Whatever the strengths or limitations of the Pavlovian principle, one point stands out without a doubt: this type of conditioning always depends upon the elicitation of response. Respondent behavior involves purported reflex behavior, which consists of nonvoluntary responses mainly of the glands and smooth muscles. (B. F. Skinner, 1938).

Instances of such nonvoluntary responses are eye blinks and tics, salivation, hunger contractions, as well as emotional reactions. Consequently Pavlov's dogs were taught to salivate at the sight of food when a bell sounded, after the bell and food had been paired over a number of trials. In one of the famous Pavlovian experiments, a bell was rung slightly before the food stimulus was presented. After this combination of bell and food had been repeated a number of times, the dog started to salivate whenever the bell was rung, though on that particular trial no food was given.

As all the reflexes mentioned involve the action of identifiable eliciting stimuli, we can use respondent as the equivalent of Pavlovian conditioning, also we can speak of a respondent when referring to a specific instance of such conditioned or unconditioned behavior. It was reported from Pavlov's laboratory, early in the twenties of this century that a conditioned reflex, once set up, might serve as the unconditioned-reflex basis of another; plus a distinction was made between primary and secondary, or higher-order, conditioning.

Frolov, one of Pavlov's coworkers, conditioned salivation to both the sound of a buzzer as well as the beat of a metronome. When these two first-order conditionings were well recognized, he used them in building a second-order reflex -- salivation in response to a visual stimulus, a black square. Great care had to be exercised in presenting the stimuli: an interval of 15 seconds had to elapse between the black square also the sound of the 'reinforcing' metronome beat or no conditioning was possible.

In addition, the secondary reflex never became very strong: the latency was great and the response magnitude was small. However some effect was discernible, despite the fact that the black square was never paired directly with the original food stimulus. In one more experiment, Foursikov used the foot-withdrawal response to electric shock as his basic reflex and was capable to get results that pointed to the possibility of third-order conditioning.

The withdrawal response was first conditioned to a tactual stimulus, then to the sound of bubbling water, and, lastly, to a tone of 760 cycles per second, with each new reflex based wholly upon the preceding one. This is schematized in the 3 paradigms. Again, though, the effect required highly controlled experimental conditions, was to a certain extent unstable, and grew less as the order went higher. As well, prolonged attempts by Foursikov to set up a fourth-order reflex were completely without success. (W. David Pierce, Carl D. Cheney, 2004).

It is probable that the facts do not obviously prove the existence of higher-order conditioning. Possibly, the findings are because of other factors in the

situation than stimulus combination. In Foursikov's study, one might point to the sensitizing effect of electric shock and the similarity of the sound of tone to that of bubbling water for at least some of the effects of the conditioning procedure. Be this as it may, the influence of higher-order conditioning could barely be expected to play much of a part in the everyday behavior of organisms, where conditions are hardly ever well controlled.

The principle of respondent conditioning, firmly established on an experimental footing, had numerous repercussions in psychology. It appealed particularly to the objectivists in the field as a welcome replacement for the older, subjective " association of ideas" -- a birthright from British philosophy. Men like John B. Watson saw in the notion at least a partial explanation of the fact that numerous stimulus-response relations, not discoverable in infancy, are present in adult life.

Ignoring the problem which this raised for anyone who sought to identify, in any adult, all the stimuli for his responses, they seized upon the principle to illustrate that everyone's behavior repertory is the final product of countless stimulus substitutions. Besieged by the vision of a natural-science explanation of behavior that had been attributed to 'psychic' or 'mental' influence, they forgot for a time that they were at the start, rather than the end of their labors. (Dermot Barnes, Bryan Roche, 1996).

The obvious demonstration of higher-order conditioning gave additional momentum to this movement. Overlooking the difficulties involved in such a demonstration, they accepted the experimental findings with eagerness as proof of the all embracing power of Pavlov's formulation. If the mere

combination of stimuli, though remote from the one that was initially reinforcing, sufficed to set up new stimulus-response connections, the very fortress of subjectivity -- the " higher mental processes" of imagination and thought -- might soon be stormed.

Ruth Anne Rehfeldt, Linda J. Hayes, 1998). Pavlov himself, even though not unaware of the behavioral implications of his work, was more interested in the light he thought it shed upon the functions of the brain. Conditioning, for him, depended upon the thorough control of experimental variables -- time of stimulus presentation, number of reinforcements, strength of the basic reflex, as well as other factors -- all of which were to be studied in detail by laboratory methods.

Wherever he looked, he saw problems, the analysis of which needed research, and more research. Conversely, his most enthusiastic psychological admirers saw merely solutions, answers to age-old questions. When these early enthusiasts recognized any scientific problem, it was only the old one of identifying the stimulus components of every environmental situation and unfolding the responses associated therewith. And such a problem does not readily give way to experimental attack.

Nowadays we view the matter in a different way. Modern psychologists, even though less interested in the physiological implications of their studies in this field, tend to bend forward in Pavlov's direction. That is, they have enthusiastically adopted his experimental attitude and generally are wary of extending the principle into territory not already cleared by laboratory-

research. Steadily, they have taught us to see the limitations and the strength of Pavlov's work. (James T. Todd, Edward K. Morris, 1995).

Respondent conditioning is now a well-accepted principle of behavior. Pavlov would deserve a place in the history of psychology, if for no other reason. Luckily for us, his work did not stop at this point. When we consider such concepts as those of " extinction," " generalization," and " discrimination," we again have occasion to pay homage to this Russian genius. He did not give us a complete system of behavior. In actual fact, non-Pavlovian, principles have actually become more important in the development of such a system.

However he carried us a great step forward in the path we were destined to go after in the scientific study of animal and human conduct. Retrospectively, it is interesting to consider that a physiologist should have been the man to do so much in promoting our enterprise. We are in no position to evaluate his contributions within his chosen field; we can say very little regarding the degree to which he cleared up the mystery of brain action; however his work will stand for many generations as a landmark in the analysis of behavior.