

CASE HISTORIES AND SHORTER COMMUNICATIONS

A note on backward conditioning

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Franks and Wilson (1974) have urged that explanations of the effects of chemical aversion therapy in terms of conditioning are invalid because "the unconditioned stimulus in aversion therapy (chemically induced nausea) often precedes rather than follows the conditioned stimulus." They go on to say that "although animal research indicates that such 'backward conditioning' is relatively ineffective in the establishment of an avoidance response (Kimble, 1961), it appears to be as effective as 'forward conditioning' aversive therapy. Thus, a strict classical conditioning paradigm and explanation must be considered both inadequate and misleading." (p.17.) This erroneous impression is widespread, and should be corrected in the interests of avoiding the common accusation that the claims of behaviour therapy to be based on scientific principles of learning and conditioning theory are fraudulent. What is the actual position with respect to backward conditioning?

Tibor Dostalek (1964, 1973) has shown quite conclusively that backward conditioning can indeed occur in laboratory investigations: his book should be consulted for the voluminous details without which a proper understanding of his methodology cannot be obtained. (See also Dostalek and Dostalkova, 1964; Dostalek and Figar, 1956.) Other writers who have obtained evidence in favour of Asratyan's theory concerning the existence of two-way connections between the brain areas corresponding to the UCS and the CS are Asratyan (1967) himself, Struchkov (1964) and Varga and Pressman (1963.) Why is it that these experiments seem to contradict the results of well planned and executed American work?

The answer would seem to lie in the strength of the UCS and the CS employed in these different experiments. Typically in the U.S.A. the CS is much weaker than the UCS; under these conditions backward conditioning either does not occur, or is much weaker than forward conditioning.

This may be due to a masking effect of the stronger stimulus in backward conditioning, or it may be due to changes in the temporal sequence and the situational background (as suggested, for instance, by Wyrwicka, 1972). In the experiments demonstrating backward conditioning, however, both the CS and the UCS are strong (as in the work of Asratyan), or both are weak (as in the work of Dostalek.) Under these conditions no masking (or whatever may cause the disappearance of the phenomenon when the UCS is much stronger than the CS) occurs, and backward conditioning is observed.

If this analysis is correct in essence, then we should not be surprised to find that chemical aversion therapy works, even when the stimuli are applied in such a way that backward conditioning may be implied. Both the CS and the UCS are "strong", in the sense of the word given to it by Asratyan, and these are precisely the conditions which should lead to backward conditioning. Far from running counter to laboratory evidence, therefore, the clinical phenomena exemplify with great precision what can be found in the laboratory. What has failed, hitherto, has been a proper knowledge and understanding of the phenomena of backward conditioning, and a tendency to accept as universally valid relations in the strength of the stimuli employed which failed to sample all the available contingencies. It is to be hoped that experimentalists will take up this problem and amplify our understanding of these complex phenomena. Until this is done we need not accept the criticism that clinical phenomena such as those here discussed cannot be understood or explained on terms of learning theory: quite the opposite is true.

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