

ON EMPIRICAL DISCONFIRMATIONS OF EQUIVOCAL DEDUCTIONS WITH INSUFFICIENT DATA

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Varble's conclusions regarding the role of social reinforcement in the modification of verbal behavior are questioned on both procedural and conceptual grounds. In interview situations therapists simultaneously reinforce numerous classes of responses on different schedules; consequently, an adequate test of reinforcement effects must include assessment of all major response changes along with their associated patterns of reinforcement. Moreover, the effects of selective reinforcement cannot be revealed when approved and disapproved classes of response are combined into a single dependent measure. The need for close linkages between behavioral outcomes and their controlling variables in psychotherapy research is stressed.

Most of the early investigations of psychotherapy assessed changes in clients' behavior but neglected to measure the accompanying therapists' responsivity, which is essential to an understanding of treatment processes. By confining analyses to outcomes investigators could readily affirm all sorts of causal conditions with immunity. Later, it was recognized that little advance can be made in explicating psychotherapeutic processes unless behavioral changes are systematically linked to their immediate determinants. Consequently, several content-analysis systems were devised (Bandura, Lipsher, & Miller, 1960; Dittes, 1957; Murray, 1956) to measure sequential client-therapist covariations in verbal behavior as they occur naturally during interview sessions.

The approach-avoidance system developed by Bandura, Lipsher, and Miller (1960) was based on the rationale that clients' affective expressions are partly governed by therapists' positive and negative responses to them. Avoidance responses in which therapists ignore, avoid, and disapprove clients' expressions were assumed to function analogously to negative reinforcers; conversely, approach responses in which therapists display approval, encourage further expressions of clients' thoughts and feelings, and reflect clients' feelings would serve as positive social reinforcements. Analyses of therapeutic interviews in terms of this conceptual system, indeed, confirmed that positive responses by the therapist to clients' hostile verbalizations greatly increased the probability of their continued occurrence, whereas negative responses substantially decreased subsequent expressions of verbal aggression. These causal relationships were subsequently replicated with different classes of responses, including aggression, dependency, and sex, and with markedly diverse clinical populations (Caracena,

1965; Goldman, 1961; Kopplin, 1963; Schuldt, 1966; Winder, Ahmad, Bandura, & Rau, 1962). In a longitudinal study Varble (1968) likewise finds that approach facilitates, and avoidance inhibits, hostile responsivity at all stages of therapy. However, the hypothesis that hostile expressions would increase as therapy progressed was disconfirmed. On the basis of the latter finding, Varble concludes that operant conditioning principles are inadequate to explain the complexities of psychotherapy. This conclusion has significant implications for psychotherapists who rely on the interview method as a means of producing psychological changes and who interpret the influence process in social reinforcement terms.

In this invited reply I shall not attempt to champion an operant model, but rather attempt to show that the disconfirmed hypothesis does not necessarily follow from reinforcement theory under the restricted measurement conditions of the present study, and that the obtained findings are insufficient either to support or to challenge the explanatory value of reinforcement concepts. Before turning to these issues, I should like to emphasize that the diverse verbal changes often effected through interview therapies are not attributable solely to therapists' reinforcement practices, and that behavioral modifications associated with reinforcement operations are frequently determined jointly by cognitive and incentive variables. With respect to the latter point, it should also be noted that while the verbal conditioning paradigm is satisfactory for demonstrating the facilitative effects of awareness on rate of verbal conditioning (Spielberger & DeNike, 1966), it is inadequate to test the more basic question of whether cognitive mediation is a necessary precondition for performance changes.

Varble predicts a temporal increase in hostility on the mistaken assumption that the

psychotherapeutic interview situation can be considered analogous to verbal conditioning experiments in which reinforced responses typically increase over time. In fact, the two situations differ in several fundamental respects so that results of verbal conditioning experiments do not provide a basis for predicting changes in psychotherapeutic interviews even though they may be extensively determined by therapists' reinforcement practices. In virtually all verbal conditioning studies a single class of responses is positively reinforced either continuously or according to some intermittent pattern. By contrast, in the psychotherapeutic situation a therapist simultaneously reinforces numerous classes of responses, each on a somewhat different schedule of reinforcement. Because of the interdependence of response changes one cannot meaningfully predict the effects that a given level of reinforcement will have on a particular form of verbal behavior without knowing the schedules on which other competing response classes are reinforced. To take a simple two-response case, if a therapist continues to reward hostility on a 50% schedule, but changes his reinforcement of nonemotional verbalizations from an initial level of 10% to 80% in later stages of therapy then one would predict a temporal decrease in hostility responses. If the response measurement was confined to hostile verbalizations one might erroneously conclude that the findings clearly refute reinforcement principles. To continue with the same example, if hostility was stably rewarded on the same 50% basis and social reinforcement of nonemotional responses was reduced from 80% to 10% then one would expect hostility expressions to increase over time. An identical schedule of reinforcement applied to a given class of responses may thus be associated with increases, decreases, or no changes in behavior depending upon the patterns of reinforcement operative with respect to competing response tendencies. The problem of unmeasured interactive effects is particularly critical in the study under discussion considering that hostility expressions comprise only approximately 11% of the total interview content. An adequate test of reinforcement effects as manifested beyond individual interaction sequences would require specification of all the major response changes occurring in the interview situation along with their associated patterns of social reinforcement.

Interpretations of even the partial data reported are complicated by the fact that the therapists responded differentially to hostile expressions—encouraging approximately half of the verbalizations and discouraging the remainder—whereas the diverse hostile responses displayed by

clients are combined into a single category. It is reasonable to assume that therapists' positive and negative reactions are not random but rather are partly determined by the form hostility takes. A relatively consistent pattern of selective reinforcement would be expected to exert a differential effect upon the incidence of different types of hostile responses included within the global category. Since psychotherapists, regardless of their theoretical affiliations, rarely choose to make their clients more hostile as a long-range objective, it is highly probable that they support appropriate hostile expressions and discourage dysfunctional forms or ones that they find personally threatening. Under conditions of differential reinforcement the total frequency of responses in a broad class may remain comparatively stable over a period of time, although the relative incidence of component responses has been substantially altered. In this case, a composite index of behavior change would obscure well-defined reinforcement effects.

Reliance upon an undifferentiated dependent measure most likely accounts for the discrepancy between results of the present investigation and those reported by Murray (1956), who found that approved responses increased in frequency while disapproved verbalizations diminished over time. These differential findings are attributed by Varble to lower rates of therapist approach behavior and to the use of broader therapist response categories in the present study. Had separate curves been plotted for responses that therapists consistently encouraged and those that they were prone to discourage, as Murray did, then both studies would undoubtedly have yielded analogous results. The effects of selective reinforcement cannot be revealed when approved and disapproved classes of response are combined into a single measure.

The precise contingencies that exist between clients' diverse hostile responses and therapists' reactions cannot be determined from the manner in which the interaction sequences were apparently coded. Nevertheless, the findings reveal that therapists utilized essentially the same rate of positive reinforcement at different phases of treatment which, in turn, maintained the same level of hostile verbalization. Evidence that a steady rate of positive reinforcement produced a uniform level of responsivity can hardly be interpreted as refuting reinforcement theory, unless it were shown that clients expressed the same amount of hostility during a base-line period in which verbal aggression was never reinforced.

There are some lesser findings that might be passed without comment because either the rationale for the predictions is unclear, isolated

differences of borderline level of significance are reported without overall statistical tests to indicate whether individual comparisons are warranted, or the data are not directly pertinent to the major issue under discussion.

In summary, one might reiterate the basic requirement that any study designed to elucidate change processes should include adequately measured outcomes that are systematically linked to their presumed controlling variables. When causal linkages are loose and ill-defined, spirited disputes flourish but little headway is made in delineating the conditions controlling behavioral changes and the mechanisms through which the effects are produced.

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