

MODIFICATION OF SOCIAL WITHDRAWAL THROUGH SYMBOLIC MODELING¹

ROBERT D. O'CONNOR

STANFORD UNIVERSITY²

The present experiment was designed to test the efficacy of symbolic modeling as a treatment to enhance social behavior in preschool isolates. Nursery school children who displayed marked social withdrawal were assigned to one of two conditions. One group observed a film depicting increasingly more active social interactions between children with positive consequences ensuing in each scene, while a narrative soundtrack emphasized the appropriate behavior of the models. A control group observed a film that contained no social interaction. Control children displayed no change in withdrawal behavior, whereas those who had the benefit of symbolic modeling increased their level of social interaction to that of non-isolate nursery school children.

Recent years have witnessed increasing applications of principles of learning to psychopathology. Ample evidence has accumulated to indicate that behavioral approaches hold considerable promise for the treatment of diverse psychological conditions (Bandura, 1969; Eysenck, 1964; Krasner and Ullmann, 1967; Wolpe and Lazarus, 1967). Many of these applications, however, have been concerned with the treatment of highly circumscribed disorders. Only recently have researchers begun to investigate the modifications of interpersonal modes of behavior.

Social interaction, an obviously important factor in personality development, has become the focus of much attention among social-learning theorists, developmentalists, and therapists. There are several reasons for highlighting the role of interpersonal behavior in personality development. First, a child who

is grossly deficient in social skills will be seriously handicapped in acquiring many of the complex behavioral repertoires necessary for effective social functioning. Second, children who are unable to relate skillfully to others are likely to experience rejection, harassment, and generally hostile treatment from peers. Such negative experiences would be expected to reinforce interpersonal avoidance responses which, in turn, further impede the development of competencies that are socially mediated. Current theories concerning the determinants of personality patterns (Bandura, 1969; Bandura and Walters, 1963; Mischel, 1968; Peterson, 1968) emphasize social variables and underscore the general importance of social interaction.

Several attempts have been made to enhance the social behavior of isolate children (Allen, Hart, Buell, Harris, and Wolf, 1964; Hart, Reynolds, Baer, Brawley, and Harris, 1968; Hartup, 1964; Patterson and Anderson, 1964) through differential reinforcement. These studies have shown that if peer interaction is reinforced, either socially or otherwise, and isolate play is either punished or ignored, children eventually display a higher level of social behavior. The utilization of a treatment program based solely on reinforcement procedures may encounter difficulties in the development of social responsiveness in extreme isolates. However, while a series of preliminary observations which served as a pilot for the present study found 20% or more of nursery school children exhibiting rela-

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²Reprints may be obtained from the author, Dept. of Psychology, University of Illinois, Urbana, Illinois 61801.

tively low levels of social responsiveness, many of whom could be helped by arranging favorable response consequences; a smaller percentage of children either perform no social interaction response or provide only rare opportunities for the application of reinforcement. When such gross deficits exist, the reinforcing agent must either introduce a rather laborious set of "shaping" procedures, which requires waiting for the emission of a reinforceable social response, or resort to more active means for establishing the desired behavior.

Lovaas (1966) showed that relatively complex repertoires can be established to replace gross deficits through a combination of modeling and reinforcement procedures. Of greater interest and relevance to the approach used in the present study is evidence that children can acquire new patterns of behavior on the basis of observation alone (Bandura and Huston, 1961; Bandura and McDonald, 1963; Bandura and Mischel, 1965; Bandura, Ross, and Ross, 1963; Hicks, 1965). Since repertoires can thus be learned on a non-response basis, with no reinforcement to the observer, a modeling program may be particularly effective in the case of gross behavior deficits.

It was noted earlier that in most cases, severe withdrawal reflects both deficits in social skills and avoidance of interpersonal situations. An optimal treatment, therefore, should transmit new social competencies and also extinguish social fears. Modeling procedures are also ideally suited for this purpose. A series of studies by Bandura (1968a) demonstrated that various patterns of avoidance behavior can be successfully eliminated through modeling, and that such procedures are readily applicable to therapeutic situations.

By devising a carefully constructed film sequence, the therapist can stage rather complicated situations and events in a dramatic manner that controls the viewer's attention to relevant cues. While the exclusion of extraneous events provides much of this attention control, the enthusiastic and emotionally expressive behavior of models can further enhance attention and vicarious learning in the viewer (Bandura, 1962; Berger, 1962; Berger and Johansson, 1968). Once the observer's attention has thus been directed toward the filmed events, the therapist may introduce

repeated exposure to clearly defined stimuli.

Positive response consequences to the model, such as social praise or material reinforcements for modeled behaviors, which have been shown to increase the performance of similar behavior in observers (Bandura, 1965; Bandura, 1968b), can also be incorporated into filmed events. Symbolic modeling processes employing such principles have effectively extinguished severe avoidance behavior in children (Bandura and Menlove, 1968).

The present experiment sought to extend the use of symbolic modeling to the modification of social withdrawal. This approach appears particularly well suited for achieving both of the desired outcomes indicated in the pathology described above; *i.e.*, the transmission of social skills and the extinction of social fears. These two modeling processes, along with the facilitation of interpersonal behaviors which may exist in the observers' repertoire, provided the rationale for the manipulation of social interaction behavior, which in fact comprised the focus of the experimental change assessment.

Children who displayed extreme social withdrawal were shown a sound-film depicting peers engaged in progressively more active social interaction. The viewers were children who not only had very low base-rates of social interaction, according to the dual assessment procedure (below), but whose frequent retreats into corners, closets, and lockers gave observers and teachers a similar impression of active, purposive withdrawal in many instances. The filmed behavior of peers presented to these "isolates" was actively followed by reinforcing outcomes such as peer approval, either verbal or expressional (smiling, nodding, *etc.*); peer acceptance of the model into a game or a conversation, *i.e.*, invitations to join or offering play materials or reaching out to take the model's hand, *etc.*; in most scenes the model behavior resulted in some tangible reinforcement such as a block or other toy, a book to read together with the peers, a dish to wash or dry in a cooperative homemaking activity; and so on. A second group of equally withdrawn children viewed a film that contained no human characters. After exposure to their respective films, the children's social behavior was observed in the nursery school situation. It was predicted that children having the benefits of symbolic mod-

eling would display a significant increase in social interaction with their peers.

METHOD

Selection of Isolates

Head teachers in each of nine nursery school classes were asked to choose from their enrolment lists the five most socially withdrawn children in their class. Each teacher was to rank order these five children "who interact the least with their peers". Of the 365 children enrolled, the 45 nominated in this preliminary selection and 26 children randomly chosen from the remaining non-isolates were then observed in the nursery school setting at randomly selected times throughout the day.

Each child was observed for a total of 32 intervals, each interval consisting of 15 sec, over a period of eight days (with the time of day counterbalanced on consecutive days). During each 15-sec interval, the children's behavior was scored in terms of five separate response categories; one every 3 sec. These included physical proximity, verbal interaction, "looking at", "interacting with", and the size of the group involved in any interaction sequence. Although the first three response categories, considered social orienting responses, were scored, the measure of social behavior was based entirely on the frequency with which the children interacted with their peers (*i.e.*, category four). The three categories of "orienting" responses and the "size of group" category were included in the observations for intra-sample reliability checks and for possible assessment purposes in case the primary "interacts" category had not reflected such notable change in the children's behavior. Obviously, a score in the "interaction" category necessitated "proximity and looking at" responses, and increases in the less critical "verbalizes" and "number in group" categories had to accompany most interactions performed by these former isolates. The major emphasis of the experimental manipulation, therefore, was on the interaction scores, and the changes assessed were in this category alone, although changes in the other behavioral categories were at least as significant as those reported in the response class of interest here. A social interaction was defined as any behavior directed toward another child which

involved a reciprocal quality. Neither parallel play nor solitary verbalizations qualified. The two-way nature of a scorable interaction necessitated not only the output of the subject child, but some indication of recognition and attention from the second child in the interaction. Thus, if a subject spoke to or otherwise directed his behavior to another child, but the second child did not respond in any way, at least appearing to be aware of the intended interaction, no score was given for an interaction.

Six trained observers performed the ratings. During a randomly chosen 50% of the sessions, these observers were paired and observed a given child independently but simultaneously. Inter-scorer reliability on each of these sessions was $r = > 0.92$. (# of agreements/the 32 possible agreements on a given child's interactions), which allowed for matched observer correlations across subjects of $r = 0.90 +$ (product-moment) in all pairs of observers.

Children who scored fewer than five of 32 possible interactions and who had been rated by teachers as isolates were selected as subjects and randomly assigned to either the modeling or the control film conditions. Thus, to qualify for the experiment, children had to meet the dual criteria of having exhibited extreme withdrawal over a long period of time as judged by their teachers, and to have displayed isolate behavior as measured by objective behavioral observations. Of the 20 "isolates" who met these criteria, 13 were included in the experiment; four of the remaining seven were omitted because they were frequently absent from school; and three of the children vigorously refused to leave the nursery room.

The 26 non-isolate children were primarily included to furnish an additional baseline for evaluating any changes produced by the treatment program. These children displayed a mean of 9.1 social interactions, while the means for children assigned to the modeling and control conditions were 1.75 and 1.50 respectively, with the scores in both groups ranging from 0 to 5. The modeling group contained four girls and two boys and the control group, four girls and three boys.

Treatment Conditions

Children in both conditions were brought individually to the experimental room where

they were told they could watch a television program. Each child was seated before a large TV console while the experimenter plugged in the set and ostensibly tuned in the picture. The films were shown on a glass lenscreen by means of a rear projector arrangement. As the apparatus was plugged in, the hidden projector and tape recorder were activated simultaneously. An extension speaker directed the sound through the TV set.

The experimenter left the child alone in the room to view the film on the pretext that he had some work to complete and would return before the film had ended. The experimenter then observed the session through a one-way mirror from an adjoining room. All children appeared to be highly attentive to the "TV show" throughout the film. The attention apparently commanded by the television presentation was quite impressive and obviously advantageous to the experimental procedure.

Children in the modeling condition saw a sound-color film lasting approximately 23 min. The film portrayed a sequence of 11 scenes in which children interacted in a nursery school setting. In each of these episodes, a child is shown first observing the interaction of others and then joining in the social activities, with reinforcing consequences ensuing. The other children, for example, offer him play material, talk to him, smile and generally respond in a positive manner to his advances into the activity. The scenes were graduated on a dimension of threat in terms of the vigor of the social activity and the size of the group. The initial scenes involve very calm activities such as sharing a book or toy while two children are seated at a table. In the terminal scenes, as many as six children are shown gleefully tossing play equipment around the room.

Multiple modeling has been shown to be more efficacious than single modeling (Bandura and Menlove, 1968). Also, a second pilot study conducted as a preliminary to the present experiment suggested a powerful effect on social behavior of subjects as a result of multiple, live peer-modeling; the child displaying the social approach behavior was varied from scene to scene in terms of age and sex, including a total of six different models, four girls and two boys, with their ages ranging from 4 to 7 yr.

To accent further the modeling cues and the positive consequences associated with the social behavior of the approaching child, a narrative sound track was prepared in which a woman's voice, judged by the experimenter to be very soothing, described the actions of the model and the other children in the ongoing sequence. The script consisted entirely of descriptions of ongoing social responses and outcomes and was a further attempt to focus the viewers' attention to relevant cues.

The control film depicted 20 min of the acrobatic performances of Marineland dolphins and was accompanied by a musical soundtrack. Since the film contained no human characters, it provided a control for any effects which might have been derived solely from the presentation of a film in the experimental procedure and contact with experimenters. The control group further provided a basis on which to measure any change in the social behavior of isolate subjects which might have occurred as a result of nursery school participation during the course of the project.³

Post-Treatment Assessment

Immediately after being shown their respective films, the children were returned to their regular classrooms. They were given 2 min to adapt to the classroom situation, after which they were observed for 32 consecutive intervals, each lasting 15 sec, according to the same observation procedure employed in the pre-treatment assessment. The social interaction score was again the number of 15-sec intervals in which the child displayed a direct social interchange (defined according to the "reciprocal quality" criteria mentioned earlier) with one or more children. In order to control for any bias in ratings, observers were kept unaware of condition assignments, and each observed a random combination of treated and control subjects. Aside from the usual "blind assessment" control, this randomizing technique was thought to reduce further any possible observer bias.

RESULTS

Figure 1 represents the mean number of social interaction responses performed by chil-

³A copy of the 400 ft super-8-mm film and sound-track can be obtained from the author for approximately \$66.00 (cost) plus \$6.00 for packing and mailing.

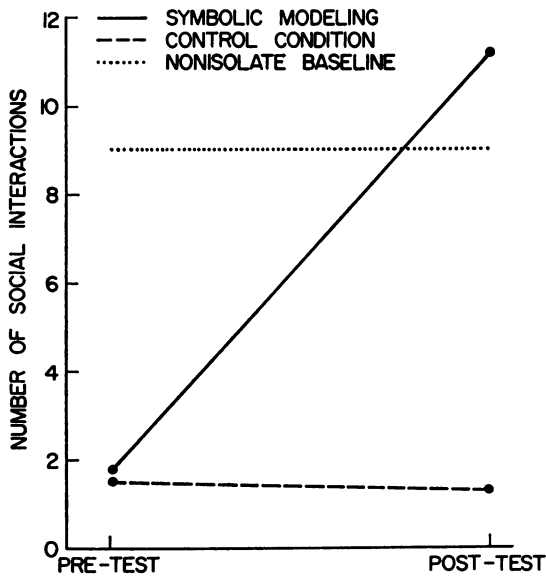


Fig. 1. Mean number of social interactions displayed by subjects in the modeling and control conditions, before and after the experimental sessions. The dotted line represents the level of interactions manifested by 26 non-isolate children who were observed at the pretest phase of the study.

dren in the modeling and control conditions during the pretest and immediately after the experimental session.

An analysis of within-group changes showed that the seven control children remained essentially unchanged, whereas the six children who had viewed the modeling film markedly increased their level of social interaction ($t = 2.29$; $p < 0.03$). The post-test interaction scores of treated subjects were in fact similar to those of non-isolates who had been observed during the pretest period.

A between-groups analysis revealed the change in social interaction to be significantly greater for subjects in the modeling treatment than for controls ($t = 2.53$; $p = 0.015$). A between-groups comparison of the levels of social interaction achieved at post-test indicated significant differences as evaluated by either the t -test ($t = 2.70$; $p = 0.01$) or the Mann Whitney U-test ($U = 3.0$; $p < 0.004$).

Having measured the powerful effects of the modeling film in terms of the group comparisons above, data for the individual subjects in the modeling condition were found to indicate consistent positive changes across subjects. All six children in the modeling condition exhibited increased social interaction behavior in

the post-film assessment. Children in the control condition performed essentially the same number of interactions before and after viewing the control film, with only slight increases or decreases in the behavior.

DISCUSSION

The present results established symbolic modeling as a highly efficacious procedure for modifying social withdrawal. Children who did not receive the modeling treatment remained socially withdrawn, whereas those who observed a systematic filmed presentation of peer interactions associated with reinforcing consequences displayed a significant increase in social responsiveness.

Follow-up observations could not be made because the nursery school term was completed. However, a second set of teachers' ratings was obtained at the end of the school year. The teachers, who were kept uninformed as to which conditions children had been assigned, again rated the five most withdrawn children from their enrollment lists as they had done in the preliminary selection. Only one of the six subjects who had been in the modeling condition was still rated as an isolate. It is interesting to note that this child, who also improved the least as measured by behavior observation, viewed the modeling film with the sound track 20-sec behind the picture due to a mechanical failure. Four of the seven control subjects were again judged to be extreme isolates. Although these findings have some suggestive value, they should be accepted with reservations because of the global nature of the ratings and the fact that changes in classroom enrollment may affect their comparability.

Immediate treatment effects achieved by symbolic modeling may produce lasting changes in social interaction without the need of additional procedures, provided that the children's initial social behavior is favorably received by peers. However, the application of systematic reinforcement of appropriate social responses would ensure the maintenance of the induced behavioral changes. Bandura has suggested "the combined use of modeling and reinforcement procedures" as the most efficacious mode of therapy in "eliminating severe behavioral inhibitions" (Bandura, Grusec, and Menlove, 1967). In order to substan-

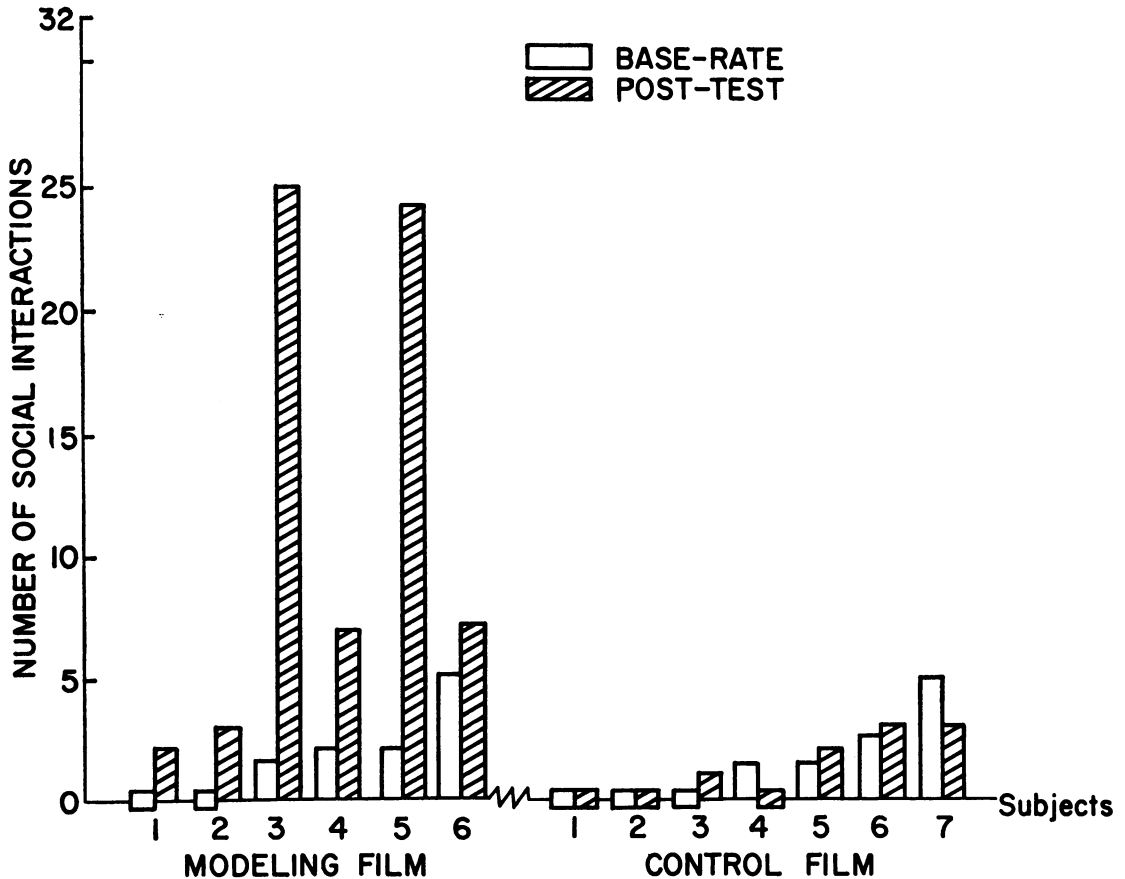


Fig. 2. Actual number of social interactions displayed by each child in either condition, before and after exposure to the modeling or control film.

tiate this hypothesis a study needs to be conducted which extends the design of the present experiment to include durational (follow-up) assessment periods, as well as a comparison of modeling, shaping, and combined treatment procedures. In the present study, social inhibitions were reduced and appropriate social responses were facilitated through symbolic modeling with built-in reinforcement to the model. New responses to familiar social stimuli which were formerly assumed to have elicited avoidance behavior were acquired vicariously within one treatment session.

The subsequent performance of these newly acquired behaviors is seen as primarily resulting from the facilitation and extinction effects which derive from the observation of models performing the target behaviors with no aversive consequences ensuing. This theoretical explanation of the modeling effects achieved

is based on the same set of experimental data which guided the construction of the treatment film (an important point in the comparison of differential treatment outcomes). A distinction is drawn between response *acquisition* and response *performance* according to experimental data derived from a recent experiment (Bandura, 1965b) which suggested that novel behaviors may be acquired by observers, even though the models are punished, but that these responses may not be performed readily without the addition of strong incentives beyond those of the situational stimuli in the modeling presentation. The conclusion from this study is theoretically relevant to the present discussion, in that it suggests that a model's reinforcement contingencies may be negative enough to inhibit performance of newly acquired responses, but have little or no effect on their acquisition. Other data, such as the Berger (1962, 1968) studies mentioned

earlier and a recent demonstration of arousal reduction in snake phobics through live modeling (Blanchard, 1968), provide support for the additional modeling effects of disinhibition and the facilitation of responses existing in the observer's repertoire, which complete the three-fold theory of modeling effects incorporated into the design of the present film and the theoretical explanation of its effects.

An alternative explanation for the increased social behavior of children who observed the modeling film might be based strictly on the principles of reinforcement theory. Since the data here indicate only changes in the rate of social interaction responses, it might be argued that the simplest behavioral description would identify the filmed presentation as a discriminative stimulus for appropriate matching responses. (Baer and Sherman, 1964; Baer, Peterson, and Sherman, 1967; Peterson, 1968). This approach would be based upon what is often considered the most parsimonious behavioral analysis of observable events, *i.e.*, the performance of measurable behaviors and a description of the stimulus situation in which the matching behaviors, as a "functional response class", occurred. The rationale for such a description might be based upon the observer's prior history of reinforcement for matching models' behavior, or similar conceptions of "imitation", *per se*, with emphasis on the change in reinforcement value of models' behavior, the controlling power of modeled behavior as a discriminative stimulus, *etc.* (Staats, 1963, 1968). Aside from recent suggestions concerning the presumptive nature of these "heavyweight" reinforcement-theory explanations (Glucksberg, 1968); the parsimony deriving from reinforcement approaches, in terms of therapeutic efficiency, has not yet been demonstrated in instances where gross behavior deficits are identified as the change-worthy phenomena. The expense of "shaping time" must be compared to a treatment which may provide for the acquisition of possibly novel skills according to principles of associative learning (contiguous presentation of modeling stimuli), as well as facilitating the performance of modeled responses and other appropriate behaviors in the observer's repertoire (discriminative stimulus function of non-aversive modeled behavioral outcomes), while reducing negative arousal responses to feared

stimuli, all in one treatment session. The explanatory value of reinforcement principles may thus be relevant to performance variables, while an approach that is intended to effect input (learning) variables as well may provide treatment procedures with markedly greater applicability to behavior deficit conditions. The allowance for possible *learning deficits* in treatment strategies designed to modify *behavior deficits*, *i.e.*, attention to input as well as output deficits, may be much more than a theoretical distinction. The powerful effects of the modeling presentation reported here underscore what appears to be a very practical, therapeutically useful reason to allow for the notion of mediational processes as well as reinforcement principles when these factors may be relevant to the therapeutic strategy.

This brief discussion of two possible explanations of the modeling effects achieved in the present study may serve to direct the reader's attention to further analyses of the modeling process in general. Thoroughly detailed presentations may be found in more appropriate publications (Bandura, 1968c; Bandura, 1969; Mischel, 1968; O'Connor, 1969; Staats, 1968; Ullmann, 1968).

It should be noted in passing that the present experiment achieved significant changes in social behavior among children with relatively severe deficits without developing a therapeutic relationship. Until recently, a fairly intimate client-therapist relationship and the attainment of insight have been considered necessary conditions for personality change. In contrast, the results and discussion above indicate that the social behavior of children can be effectively enhanced by efforts to arrange social stimulus conditions which may ensure the acquisition of requisite competencies, the reduction of inhibiting fears, and the facilitation of appropriate responses. It should also be apparent that attention to learning variables provides for treatment procedures which can optimistically be applied to any program of behavior change. Teachers and other social agents might greatly increase the efficacy of their work with individual children, as well as in group procedures, by employing some of the principles of social learning and symbolic modeling presented here. The use of carefully designed therapeutic films in classroom and experimental situations alike may provide significantly more efficient modifica-

tion of various behavior deficits and other deviant behaviors.

REFERENCES

- Allen, K. E., Hart, B. M., Buell, J. S., Harris, F. R., and Wolf, M. M. Effects of social reinforcement on isolate behavior of a nursery school child. *Child Development*, 1964, 35, 511-518.
- Bandura, A. Influence of models' reinforcement contingencies on the acquisition of imitative responses. *Journal of Personality and Social Psychology*, 1965, 1, 589-595. (b)
- Bandura, A. Modeling approaches to the modification of phobic disorders. *Ciba Foundation symposium: The role of learning in psychotherapy*. London: Churchill, 1968. (a)
- Bandura, A. *Principles of behavior modification*. New York: Holt, Rinehart & Winston, 1969, (in press).
- Bandura, A. A social learning interpretation of psychological dysfunctions. In P. London and D. Rosehan (Eds.) *Foundations of abnormal psychology*. New York: Holt, Rinehart & Winston, 1968. Pp. 293-344.
- Bandura, A. Social learning theory of identificatory processes. In D. A. Goslin (Ed.), *Handbook of socialization theory and research*. Chicago: Rand McNally, 1968. Pp. 213-262 (b)
- Bandura, A. Social learning through imitation. In M. R. Jones (Ed.), *Nebraska Symposium of Motivation*. 1962. Lincoln: University of Nebraska Press, 1962. Pp. 211-269.
- Bandura, A. Vicarious processes: A case of no-trial learning. In L. Berkowitz (Ed.), *Advances in experimental social psychology*. Vol. II. New York: Academic Press, 1965. Pp. 1-55.
- Bandura, A., Grusec, J., and Menlove, F. L. Vicarious extinction of avoidance behavior. *Journal of Personality and Social Psychology*, 1967, 5, 16-23.
- Bandura, A. and Huston, Aletha C. Identification as a process of incidental learning. *Journal of Abnormal and Social Psychology*, 1961, 63, 311-318.
- Bandura, A. and McDonald, F. J. Influence of social reinforcement and the behavior of models in shaping children's moral judgments. *Journal of Abnormal and Social Psychology*, 1963, 67, 274-281.
- Bandura, A. and Menlove, F. L. Factors determining vicarious extinction of avoidance behavior through symbolic modeling. *Journal of Personality and Social Psychology*, 1968, 8, 99-108.
- Bandura, A. and Mischel, W. Modification of self-imposed delay of reward through exposure to live and symbolic models. *Journal of Personality and Social Psychology*, 1965, 2, 698-705.
- Bandura, A., Ross, D., and Ross, S. A. Transmission of aggression through imitation of aggressive models. *Journal of Abnormal and Social Psychology*, 1961, 64, 575-582.
- Bandura, A. and Walters, R. *Social learning and personality development*. New York: Holt, Rinehart & Winston, 1963.
- Baer, D. M. and Sherman, J. A. Reinforcement control of generalized imitation in young children. *Journal of Experimental Child Psychology*, 1964, 1, 37-49.
- Baer, D. M., Peterson, R. F., and Sherman, J. A. The development of imitation by reinforcing behavioral similarity to a model. *Journal of the Experimental Analysis of Behavior*, 1967, 10, 405-416.
- Berger, S. M. Conditioning through vicarious instigation. *Psychological Review*, 1962, 69, 450-466.
- Berger, S. M. and Johansson, S. L. Effect of model's expressed emotions on an observer's resistance to extinction. *Journal of Personality and Social Psychology*, 1968, 10, 53-58.
- Blanchard, E. B. *Relative contributions of modeling, informational influences, and physical contact in the extinction of phobic behavior*. Unpublished doctoral dissertation. Stanford University, 1968.
- Eysenck, H. J. *Experiments in behavior therapy*. New York: Macmillan, 1964.
- Glucksberg, S. A self-made straw man. *Contemporary Psychology*, 1968, 13, 624-625.
- Hart, B. M., Reynolds, N. H., Baer, D. M., Brawley, E. R., and Harris, F. R. Effect of contingent and non-contingent social reinforcement on the cooperative play of a preschool child. *Journal of Applied Behavior Analysis*, 1968, 1, 73-76.
- Hartup, W. W. Peers as agents of social reinforcement. *Young Children*, 20, 1965.
- Hicks, D. J. Imitation and retention of film-mediated aggressive peer and adult models. *Journal of Personality and Social Psychology*, 1965, 2, 97-100.
- Krasner, L. and Ullmann, L. P. *Research in behavior therapy*. New York: Macmillan, 1964.
- Lovaas, I., Berberich, J. P., Perloff, B. F., and Schaeffer, B. Acquisition of imitative speech by schizophrenic children. *Science*, 1966, 151, 705-707.
- Mischel, W. *Personality and assessment*. New York: Wiley & Sons, 1968.
- O'Connor, R. D. *Modeling treatment of non-behavior disorders*. Paper presented at 41st annual meeting of the Midwestern Psychological Association, Chicago, March 1969.
- Patterson, G. R. and Anderson, D. Peers as social reinforcers. *Child Development*, 1964, 35, 951-960.
- Peterson, D. R. *The clinical study of social behavior*. New York: Appleton, Century, Crofts, 1968.
- Peterson, R. F. Some experiments on the organization of a class of imitative behaviors. *Journal of Applied Behavior Analysis*, 1968, 3, 225-235.
- Staats, A. W. *Learning, language, and cognition*. New York: Holt, Rinehart & Winston, 1968.
- Staats, A. W. and Staats, C. K. *Complex human behavior*. New York: Holt, Rinehart & Winston, 1963.
- Ullmann, L. P. Making use of modeling in the therapeutic interview. Paper read at A.A.B.T. meetings, San Francisco, 1968.
- Wolpe, J. and Lazarus, A. A. *Behavior therapy techniques*. London: Pergamon Press, 1966.

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