THE RESEARCH PAGE

Much vigorous laboratory activity is currently being centered on social learning in children. The review which follows discusses imitation, one basic form of social learning. In this paper, Dr. Bandura describes a series of studies emanating from his own laboratory that confirm the significance of imitation in personality development of the child and point to some of the factors that bring about imitative responses in preschool-aged children. At the same time, the research reviewed here suggests rather extensive modification of traditional psychoanalytic-based theories of identification.

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THE ROLE OF IMITATION IN PERSONALITY DEVELOPMENT *

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I remember reading a story reported by Professor Mowrer about a lonesome farmer who decided to get a parrot for company. After acquiring the bird, the farmer spent many long evenings teaching the parrot the phrase, "Say Uncle." Despite the devoted tutorial attention, the parrot proved totally unresponsive and finally, the frustrated farmer got a stick and struck the parrot on the head after each refusal to produce the desired phrase.

But the visceral method proved no more effective than the cerebral one, so the farmer grabbed his feathered friend and tossed him in the chicken house. A short time later the farmer heard a loud commotion in the chicken house and, upon investigation, found that the parrot was pommeling the startled chickens on the head with a stick and shouting, "Say Uncle!" "Say Uncle!".

While this story is not intended as an introduction to a treatise on parrot-training practices, it provides a graphic illustration of the process of social learning that I shall discuss in this paper.

One can distinguish two kinds of processes by which children acquire attitudes, values, and patterns of social behavior. First, the learning that occurs on the basis of direct tuition or instrumental training. In this form of learning, parents and other socializing agents are relatively explicit about what they wish the child to learn, and attempt to shape his behavior through rewarding and punishing consequences.

Although a certain amount of socialization of a child takes place through such direct training, personality pat-

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terns are primarily acquired through the child's active imitation of parental attitudes and behavior, most of which the parents have never directly attempted to teach. Indeed, parental modeling behavior may often counteract the effects of their direct training. When a parent punishes his child physically for having aggressed toward peers, for example, the intended outcome of this training is that the child should refrain from hitting others. The child, however, is also learning from parental demonstration how to aggress physically, and this imitative learning may provide the direction for the child's behavior when he is similarly frustrated in subsequent social interactions.

Research on imitation demonstrates that, unlike the relatively slow process of instrumental training, when a model is provided, patterns of behavior are rapidly acquired in large segments or in their entirety (Bandura, 1962). The pervasiveness of this form of learning is also clearly evident in naturalistic observations of children's play in which they frequently reproduce the entire parental role-behavior including the appropriate mannerisms, voice inflections and attitudes, much to the parents' surprise and embarrassment. Although the process whereby a person reproduces the behavior exhibited by real-life or symbolized models is generally labelled "identification" in theories of personality, I shall employ the term imitation because it encompasses the same behavioral phenomenon, and avoids the elusiveness and surplus meanings that have come to be associated with the former concept.

Let us now consider a series of experiments that both illustrates the process of learning through imitation, and identifies some of the factors which serve to enhance or to reduce the occurrence of imitative behavior.

Transmission of Aggression

One set of experiments was designed primarily to determine the extent to which aggression can be transmitted to children through exposure to aggressive adult models (Bandura, Ross and Ross, 1962). One group of children observed an aggressive model who exhibited relatively novel forms of physical and verbal aggression toward a large inflated plastic doll; a second group viewed the same model behave in a very subdued and inhibited manner, while children in a control group had no exposure to any models. Half the children in each of the experimental conditions observed models of the same sex as themselves, and the remaining children in each group witnessed opposite sex models.

This investigation was later extended (Bandura, Ross and Ross, 1963a) in order to compare the effects of real-life and film-mediated or televised aggressive models on children's behavior. Children in the human film-aggression group viewed a movie showing the same adults, who had served as models in the earlier experiment, portraying the novel aggressive acts toward the inflated doll. For children in the cartoon-aggression groups, a film in which the female model costumed as a cartoon cat exhibiting the aggressive behavior toward the plastic doll was projected on a glass lenscreen in a television console.

After exposure to their respective models all children, including those in the control group, were mildly frustrated and tested for the amount of imitative and non-imitative aggression.

The results of these experiments leave little doubt that exposure to aggressive models heightens children's aggressive responses to subsequent frustration. As shown in Figure 1, children who observed the aggressive models exhibited approximately twice as much aggression than did subjects in the nonaggressive model group or the control group. In addition, children who witnessed the subdued nonaggressive model displayed the inhibited behavior characteristic of their model and expressed significantly less aggression than the control children.

Some evidence that the influence of models is partly determined by the sex appropriateness of their behavior is provided by the finding that the aggressive male model was a more powerful stimulus for aggression than the aggressive female model. Some of the children, particularly the boys, commented spontaneously on the fact that the female model's behavior was out of character (e.g., "That's no way for a lady to be-

have. Ladies are supposed to act like ladies. . . ")

In contrast, aggression by the male model was generally viewed as appropriate and approved by both the boys ("Al's a good socker, he beat up Bobo. I want to sock like Al.") and the girls ("That man is a strong fighter. He punched and punched, and he could hit Bobo right down to the floor and if Bobo got up he said, 'Punch your nose'. He's a good fighter like Daddy.")

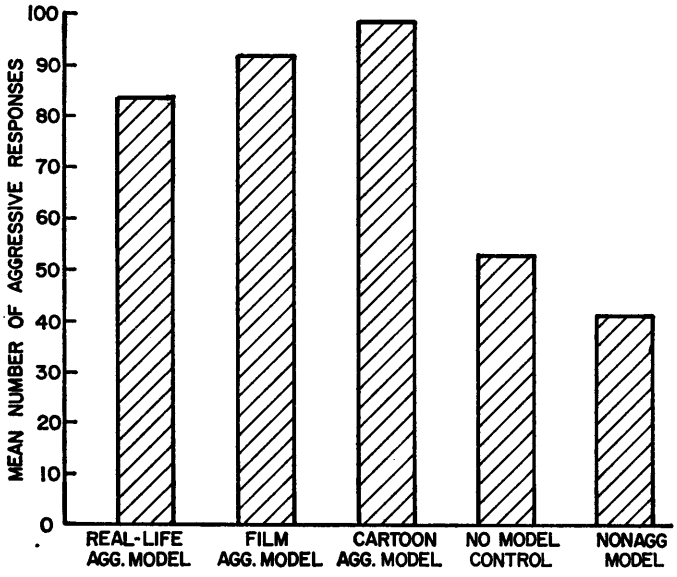

Figure 1. Mean number of aggressive responses performed by children in each of five groups.

The data furthermore reveal that aggressive models are highly influential not only in reducing children's inhibitions over aggression, but also in shaping the form of their behavior. Children who observed the aggressive models displayed a great number of precisely imitative aggressive acts, whereas, such responses rarely occurred in either the non-aggressive model group or the control group. Illustrations of the way many of the children became virtually carbon copies of their models are presented in Figure 2. The top frames show the female model performing four novel aggressive responses; the lower frames depict a boy and a girl reproducing the behavior of the female model whom they had observed in the film presentation.

Although the children were somewhat less inclined to imitate precisely the cartoon character than the real-life aggressive model, all three experimental conditions—real-life, film-mediated, and cartoon aggressive models—produced equivalent increases in overall aggressive behavior based on a variety of measures of both imitative and non-imitative aggression.

The finding that film-mediated models are as effective as real-life models in eliciting and transmitting aggressive responses indicates that televised models may serve as important sources of behavior and can no longer be ignored in conceptualizations of personality development. Indeed, most youngsters probably have more exposure to prestigeful televised male models than to their own fathers. With further advances in mass media and audiovisual technology, pictorially presented models, mainly through television, are likely to play an increasingly influential role in shaping personality patterns, and in modifying attitudes and social norms.

It has been widely assumed on the basis of psychoanalytic theory and other hydraulic energy models of personality, that children's vicarious participation in film-mediated aggression or the direct expression of aggressive behavior will serve to discharge "pent-

Figure 2. Photographs of two children exhibiting precise imitation of the female model whom they had previously observed on film.

up energies" and affects. Guided by this catharsis hypothesis, many parents, educators and mental health workers encourage hyperaggressive children to participate in aggressive recreational activities, to view highly aggressive televised programs, and to aggress in psychotherapeutic playrooms and other permissive settings.

In contrast to this "drainage" view, social learning theory (Bandura & Walters, in press) would predict that the provision of aggressive models and the inadvertant positive reinforcement of aggression, which inevitably occurs during the encouragement of cathartic expressions, are exceedingly effective procedures for enhancing aggressive response tendencies. It is not surprising, therefore, that studies in which children or adolescents have been exposed to film-mediated aggressive models (Bandura, Ross and Ross, 1961, 1963a, b; Lovaas, 1961; Mussen and Rutherford, 1961; Siegel, 1959; Walters, Llewellyn Thomas and Acker, 1962) have uniformly demonstrated that vicarious participation in aggressive activity increases, rather than decreases, aggressive behavior.

On the other hand, providing aggressive children with examples of alternative constructive ways of coping with interpersonal frustration has been found to be highly successful in modifying aggressive-domineering personality patterns (Chittenden, 1942). Additional comparisons of social theory and the traditional approaches to personality development will be presented later.

It is apparent that children do not reproduce the personalitiy characteristics of every model with whom they come into contact, nor do they imitate every element of behavior exhibited even by models whom they may have selected as their primary sources of social behavior. The experiments that I shall discuss in the remaining sections of this paper are mainly concerned with some of the psychological variables determining the selection of models, and the degree to which their behavior will be imitated.

Response Consequences to the Model and Imitation

The manner in which rewarding or punishing consequences to the model's behavior influences imitation is demonstrated in an experiment in which nursery school children observed either an aggressive model rewarded, an aggressive model punished, or had no exposure to the models (Bandura, Ross and Ross, 1963b). The models were two adults presented to the children on film projected into a television console.

In the aggression-rewarded condition, Rocky, the aggressive model appropriates all of Johnny's attractive play possessions and tasty food stuffs through aggressive-domineering means. The film shown to the children in the aggression-punished condition was identical with that shown to the aggression-rewarded group except for a slight rearrangement of the film sequence so the aggression exhibited by Rocky resulted in his being severly punished by Johnny. Following exposure to the models the children were tested for the incidence of post-exposure aggressive behavior.

Children who observed Rocky's aggressive behavior rewarded readily imitated his physical and verbal aggression, whereas, children who saw him punished exhibited relatively little imitative behavior and did not differ from a group of control children who had no exposure to the models.

At the conclusion of the experiment each child was asked to evaluate the behavior of Rocky and Johnny, and to select the character he preferred to emulate. These data yielded some interesting and surprising findings. As might be expected, children who observed Rocky's aggressive behavior punished both failed to reproduce his behavior and rejected him as a model for emulation.

On the other hand, when Rocky's aggression was highly successful in amassing rewarding resources, he was chosen by most of the children as the preferred model for imitation. The surprising finding, however, is that without exception these children were highly critical of his behavior (e.g., "Rocky is harsh" . . . "Rough and bossy" . . . "Mean" . . . ."Wicked . . . "He whack people" . . .)

It was evident from the children's comments that the successful payoff of aggression rather than its intrinsic de-

sirability served as the primary basis for emulation (e.g., "Rocky beat Johnny and chase him and get all the good toys" . . . "He came and snatched Johnny's toys. Get a lot of toys . . .") The children resolved the conflict by derogating the unfortunate victim, apparently as justification for Rocky's exploitive-assaultive behavior. They criticized Johnny for his inability to control Rocky ("He's a cry baby. Didn't know how to make Rocky mind."), for his miserliness ("If he'd shared right in the beginning, Rocky might have played nice."), and generally described him as, "Sulky", "Mean", and "Sort of dumb."

This study clearly demonstrates the way rewarding consequences to the model's behavior may outweigh the value systems of the observers—children readily adopted successful modeling behavior even though they had labeled it objectionable, morally reprehensible, and publicly criticized the model for engaging in such behavior.

In many televised and other mass media presentations antisocial models amass considerable rewarding resources through devious means but are punished following the last commercial on the assumption that the punishment ending will erase or counteract the learning of the model's antisocial behavior.

The findings from a recently completed experiment (Bandura, 1963) reveal that, although punishment administered to a model tends to inhibit children's performance of the modeled behavior, it has virtually no influence on the occurrence of imitative learning. In this experiment children observed a film-mediated aggressive model who was severely punished in one condition of the experiment, generously rewarded in a second condition, while the third condition presented no response-consequences to the model.

Consistent with the findings cited earlier, a post-exposure test of imitative behavior showed that children who observed the punished model performed significantly fewer imitative responses than children in the model-rewarded and the no-consequence groups. Children in all three groups were then offered attractive incentives contingent on their reproducing the model's behavior. The introduction of the rewards completely wiped out the previously observed performance differences, revealing an equivalent amount of learning among the children in the model-rewarded, model-punished and the no-consequences groups. Similarly, girls exhibited approximately as much imitative aggression as did the boys.

It might be concluded from these findings that exposure of children to punished antisocial or other types of models is likely to result in little overt imitative behavior. Nevertheless, the observed behavior is learned and may be exhibited on future occasions given the appropriate instigations, the instruments necessary for performing the imitative acts, and the prospect of sufficiently attractive positive rewards contingent on the successful execution of the behavior.

Nurturance and Imitation

The role of nurturance in facilitating imitative learning has been emphasized in most theories of identification. Through the repeated association of the parent's behavior and attributes with warm, rewarding, and affectionately demonstrative caretaking activities, it is assumed that the parent's behavioral characteristics gradually take on positive value for the child. Consequently, the child is motivated to reproduce these positively valenced attributes in his own behavior.

Some empirical support for the nurturance hypothesis is provided in an experiment in which the quality of the rewarding interaction between a female model and nursery school children was systematically varied (Bandura and Huston, 1961). With one group of children the model behaved in a warm and rewarding manner, while a second group of children experienced a distant and non-nurturant relationship with the model. Following the experimental social interactions the model and the children played a game in which the model exhibited a relatively novel pattern of verbal and motor behavior, and the number of imitative responses performed by the children was recorded.

Children who had experienced the rewarding interaction with the model displayed substantially more imitative behavior than did children with whom the same adult had interacted in a non-

rewarding way. Exposure to a model possessing rewarding qualities not only elicited precisely imitative verbal responses but also increased the level of non-imitative verbalization. These results are essentially in agreement with those of Milner (1951), who found that children receiving high reading readiness scores had more verbal and affectionately demonstrative maternal models than children in the low reading ability group.

The importance of attaching positive valence to the activities and behavior which the parent or teacher wishes the child to reproduce is dramatically illustrated in a case report by Mowrer (1960). A two year old girl, who suffered from an auditory defect, was seriously retarded in language development, a condition that resulted primarily from her refusal to wear a hearing aid. In analyzing the mother-child verbal interaction, it became readily apparent that the girl was hearing only language responses of high amplitude which the mother uttered in a raised voice during disciplinary interventions. Considering the repeated association of the mother's verbal behavior with negative emotional experiences, it was not surprising that the child refused to wear a hearing aid, and exhibited little interest in, or desire for, vocalization.

The mother was instructed to follow a remedial program in which she deliberately and frequently associated her vocalizations with highly positive experiences, and refrained from using language punitively. Within a brief period of time the child began to show an active interest in the mother's verbalizations, was quite willing to wear the hearing aid, and made rapid progress in her language development.

In discussions of the process of education and socialization, considerable emphasis is generally placed on direct training procedures. As the above case illustrates, however, the attachment of positive valence to modeling behavior may be an important precondition for the occurrence of social learning. Indeed, once the behavior in question has acquired positive properties, the child is likely to perform it in the absence of socializing agents and externally administered rewards.

Social Power and Imitation

In the studies to which reference has been made, children were exposed to only a single model. During the course of social development, however, children have extensive contact with multiple models, particularly family members, who may differ widely in their behavior and in their relative influence. Therefore, a further study, designed to test several different theories of identificatory learning, utilized three-person groups representing prototypes of the nuclear family (Bandura, Ross and Ross, 1963c).

In one condition of the experiment an adult assumed the role of controller of highly rewarding resources including attractive play material, appetizing foods and high status objects. Another adult was the recipient of these resources, while the child, a participant observer in the triad, was essentially ignored. In a second condition, one adult controlled the resources; the child, however, was the recipient of the positive resources, while the other adult was assigned a subordinate and powerless role.

An adult male and female served as models in each of the triads. For half the boys and girls in each condition the male model controlled and dispensed the rewarding resources, simulating the husband-dominant home; for the remaining children, the female model mediated the positive resources as in the wife-dominant home. Following the experimental social interactions the adult models exhibited divergent patterns of behavior in the presence of the child, and measures were obtained of the degree to which the child patterned his behavior after that of the models.

According to the status envy theory of identification proposed by Whiting (1959, 1960), where a child competes unsuccessfully with an adult for affection, attention, food and care, the child will envy the consumer adult and consequently identify with him. This theory represents an extension of the psychoanalytic defensive identification hypothesis that identification is the outcome of rivalrous interaction between the child and the parent who occupies an envied consumer status. In contrast to the status envy hypothesis, the social

power theory of identification (Maccoby, 1959; Mussen and Distler, 1960), predicts that children will reproduce more of the behavior of the adult who controls positive resources than that of the powerless adult model.

The results of this experiment reveal that children tend to identify with the source of rewarding power rather than with the competitor for the rewards. In both experimental triads, regardless of whether the rival adult or the children themselves were the recipients of the rewarding resources, the model who possessed rewarding power was imitated to a considerably greater extent than was the competitor or the ignored model. Moreover, power inversions on the part of the male and female models produced cross-sex imitation, particularly in girls. These findings suggest that the distribution of rewarding power within the family may play an important role in the development of both appropriate and deviant sex-role behavior.

Although the children adopted many of the characteristics of the model who possessed rewarding power, they also reproduced some of the response patterns exhibited by the model who occupied a subordinate role. The children's behavior represented a synthesis of behavioral elements selected from both models, and since the specific admixture of elements varied from child to child, they displayed quite different patterns of imitative behavior. Thus, within the one family even same-sex siblings may exhibit different personality characteristics, owing to their having selected for imitation different elements of their parents' attitudes and behavior. Paradoxial as it may seem, it is possible to achieve considerable innovation through selective imitation.

Social Learning, Psychoanalytic, and Stage Theories of Personality

It was pointed out in preceding sections of this paper, that laboratory data have failed to support predictions derived from several widely accepted psychoanalytic principles of personality development. Research generated by modern social learning theory also raises some questions about the validity of stage theories that typically depict the developmental process as involving a relatively spontaneous emergence of age-specific modes of behavior as the child passes from one stage to another. According to Piaget's theory of moral development (1948), for example, one can distinguish two clear-cut stages of moral orientations demarcated from each other at approximately seven years of age.

In the first stage, defined as objective morality, children judge the gravity of a deviant act in terms of the amount of material damages, and disregard the intentionality of the action. By contrast, during the second or subjective morality stage, children judge conduct in terms of its intent rather than its material consequences. The sequence and timing of these stages are presumably predetermined and, consequently, young children are incapable of adopting a subjective orientation while objective moral judgments are rarely encountered in older children.

However, in an experiment designed to study the influence of models in transmitting and modifying children's moral judgments (Bandura and McDonald, 1963), objective and subjective moral judgments were found to exist together rather than as successive developmental stages. The vast majority of young children were capable of exercising subjective judgments and most of the older children displayed varying degrees of objective morality.

Children who exhibited predominantly objective and subjective moral orientations were then selected and exposed to adult models who consistently expressed moral judgments that ran counter to the children's orientations. The provision of models was highly effective in altering the children's moral judgments. Objective children modified their moral orientations toward subjectivity and, similarly, subjective children became considerably more objective in their judgmental behavior. Furthermore, the children maintained their altered orientations in a new test situation in the absence of the models. It is highly probably that other personality characteristics generally viewed as predetermined age-specific phenomena can also be readily altered through the application of appropriate social

learning principles.

Despite the voluminous clinical and theoretical literature pertaining to child development, the available body of empirically verified knowledge is comparatively meagre. The recent years, however, have witnessed a new direction in theorizing about the developmental process, which has generated considerable laboratory research within the framework of social learning theory. These studies are beginning to yield relatively unambiguous statements about the influence of particular antecedent events on the behavior and attitudes of children. This approach evidently holds promise of providing both more reliable guidelines for educational practice, and the type of evidence necessary for discarding procedures that prove to be ineffective in, or even a hinderance to, the successful realization of desired developmental, educational and psychotherapeutic objectives.

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