

## A COMPARATIVE TEST OF THE STATUS ENVY, SOCIAL POWER, AND SECONDARY REINFORCEMENT THEORIES OF IDENTIFICATORY LEARNING<sup>1</sup>

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Predictions derived from 3 prominent theories of identificatory learning were tested in 3-person groups representing prototypes of the nuclear family. In 1 condition an adult assumed the role of controller of positive reinforcers. Another adult was the consumer of these resources, while the child, a participant observer in the triad, was essentially ignored. In a 2nd treatment condition, one adult controlled the rewarding resources; the child, however, was the recipient of the positive reinforcers, while the other adult was assigned a subordinate and powerless role. Following the experimental social interactions the 2 adult models exhibited divergent patterns of behavior in the presence of the child, and a measure was obtained of the degree to which the child subsequently patterned his behavior after that of the models. Children imitated primarily the model who possessed rewarding power rather than the competitor for the rewards. Moreover, power inversions on the part of the male and female models produced cross-sex imitation, particularly in girls.

Although it is generally assumed that social behavior is learned and modified through direct reward and punishment of instrumental responses, informal observation and laboratory study of the social learning process reveal that new responses may be rapidly acquired and existing behavioral repertoires may be considerably changed as a function of observing the behavior and attitudes exhibited by models (Bandura, 1962).

The latter type of learning is generally labeled "imitation" in behavior theory, and "identification" in most theories of personality. These concepts, however, are treated in the present paper as synonymous since both encompass the same behavioral phenomenon, i.e., the tendency for a person to match the behavior, attitudes, or emotional reactions as exhibited by actual or symbolized models. While the defining properties of identification are essentially the same in different personality theories, a host of divergent learn-

ing conditions have been proposed as the necessary antecedent variables for matching or identificatory behavior (Bronfenbrenner, 1960; Freud, 1946; Freud, 1924, 1948; Kagan, 1958; Klein, 1949; Maccoby, 1959; Mowrer, 1950; Parsons, 1955; Sears, 1957; Whiting, 1960).

In the experiment reported in this paper predictions were derived from three of the more prominent theories of learning by identification, and tested in three-person groups representing prototypes of the nuclear family. In one condition of the experiment an adult assumed the role of controller of resources and positive reinforcers. Another adult was the consumer or recipient of these resources, while the child, a participant observer in the triad, was essentially ignored. In a second treatment condition, one adult controlled the resources; the child, however, was the recipient of the positive reinforcers and 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 family; for the remaining children, the female model mediated the positive resources as in the wife dominant home. Following the experimental social interactions

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the two adult models exhibited divergent patterns of behavior in the presence of the child, and a measure was obtained of the degree to which the child subsequently patterned his behavior after that of the models.

According to the *status envy theory* of identification recently 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. Whiting's theory represents an extension of the Freudian defensive identification hypothesis that identificatory behavior is the outcome of rivalrous interaction between the child and the parent who occupies an envied consumer status. While Freud presents the child as in competition with the father primarily for the mother's sexual and affectional attention, Whiting regards any forms of reward, material and social, as valued resources around which rivalry may develop. The status envy theory thus predicts that the highest degree of imitation by the child will occur in the experimental condition in which the rivalrous adult consumes the resources desired by the child, with the consumer adult serving as the primary object of imitation.

In contrast to the envy theory, other writers (Maccoby, 1959; Mussen & Distler, 1959; Parsons, 1955) assume that the controller, rather than the consumer, of resources is the main source of imitative behavior. The *power theory* of social influence has received considerable attention in experimental social psychology, though not generally in the context of identification theories.

Social power is typically defined as the ability of a person to influence the behavior of others by controlling or mediating their positive and negative reinforcements. French and Raven (1959) have distinguished five types of power based on expertness, attractiveness, legitimacy, coerciveness, and rewarding power, each of which is believed to have somewhat differential effects on the social influence process. For example, the use of threat or coercion, in which the controller derives power from his ability to administer punishments, not only develops avoidance behavior toward the controller but also de-

creases his attractiveness and hence his effectiveness in altering the behavior of others beyond the immediate social influence setting (French, Morrison, & Levinger, 1960; Zipf, 1960). The use of reward power, in contrast, both fosters approach responses toward the power figure and increases his attractiveness or secondary reward value through the repeated association of his attributes with positive reinforcement. Attractiveness is assumed to extend the controller's power over a wide range of behavior (French & Raven, 1959).

In the present investigation power based upon the ability to dispense rewards was manipulated experimentally. In accordance with the social power theory of identification, but contrasting with the status envy hypothesis, one would predict that children will reproduce more of the behavior of the adult who controls positive reinforcers, than that of the powerless adult model, and that power inversions on the part of the male and female models will produce cross-sex imitation.

The *secondary reinforcement theory* of identification, which has been alluded to in the discussion of social power through attractiveness, has been elaborated in greatest detail by Mowrer (1950, 1958). According to this view, as a model mediates the child's biological and social rewards, the behavioral attributes of the model are paired repeatedly with positive reinforcement and thus acquire secondary reward value. On the basis of stimulus generalization, responses which match those of the model attain reinforcing value for the child in proportion to their similarity to those made by the model. Consequently, the child can administer positively conditioned reinforcers to himself simply by reproducing as closely as possible the model's positively valenced behavior. This theory predicts that the experimental condition in which the child was the recipient of positive reinforcements will yield the highest imitation scores with the model who dispensed the rewards serving as the primary source of imitative behavior.

#### METHOD

##### *Subjects*

The subjects were 36 boys and 36 girls enrolled in the Stanford University Nursery School. They ranged in age from 33 to 65 months, although the variability

was relatively small with most of the ages falling around the mean of 51 months.

An adult male and female served as models in the triads so as to reproduce possible power structures encountered in different types of family constellations. A female experimenter conducted the study for all 72 children.

### *Design and Procedure*

The subjects were assigned randomly to two experimental groups and one control group of 24 subjects each. Half the subjects in each group were males, and half were females.

High rewarding power was induced experimentally through the manipulation of material and social reinforcements, and the use of verbal structuring techniques. While accompanying the child to the experimental room, for example, the experimenter informed the child that the adult who assumed the role of controller owned the nursery school "surprise room," as well as a fabulous collection of play materials. After introducing the child to the controller, the experimenter asked whether the child may play in the surprise room. The controller explained that he was on his way to his car to fetch some of his most attractive toys, but the experimenter and the child could proceed to the room where he would join them shortly. As the controller left, the experimenter commented on how lucky they were to have access to the controller's play materials.

On the way to the experimental room they met the other adult who insisted on joining them but the experimenter informed her that she would have to obtain permission from the controller since he owned the room, and it was doubtful whether sufficient play materials were available for both the adult and the child. This brief encounter with the other adult was designed primarily to create the set that rewards were available to one person only and thereby to induce rivalrous feelings over the controller's resources.

As soon as the experimenter and the child arrived in the experimental room, they sat down at a small table and played with the few Lincoln Logs and two small cars that were provided. A short time later the other adult appeared and announced that the controller also granted her permission to play in the room.

The controller then entered carrying two large toy boxes containing a variety of highly attractive masculine and feminine toys, a colorful juice dispensing fountain, and an ample supply of cookies. As soon as the controller appeared on the scene, the experimenter departed.

For children in the Adult Consumer condition, the adult who assumed the role of consumer requested permission to play with the articles and the controller replied that, since the child appeared to be occupied at his table, the consumer was free to use the play materials. This monopolistic move by the consumer adult left the child stranded at a table with two relatively uninteresting toys.

During the 20-minute play session, the controller offered the consumer, among other things, miniature pinball machines, mechanical sparking toys, kaleidoscopes, dolls, and actively participated with the consumer in dart games and other activities. To add to the credibility of the situation, both the controller and consumer devoted most of their attention to articles, such as the pinball machine and dart game, which could be used in adult appropriate activities. Throughout the interaction the controller was most helpful, supportive, and generous in dispensing social reinforcers in the form of praise, approval, and positive attention. The consumer, in turn, commented frequently on the controller's highly attractive resources so as to further enhance the controller's rewarding status. The consumer also verbalized considerable positive affect characteristic of a person experiencing positive reinforcements.

Approximately half way through the session, the controller remarked, "Say, you look hungry. I have just the thing for you." He then brought forth the soda fountain dispenser, poured colorful fruit juices into paper cups and served them to the consumer along with a generous supply of cookies. While the consumer was enjoying his snack, the controller turned on a "TV-radio" that played a nursery melody while a revolving dial displayed a series of storybook scenes.

Toward the end of the session, the controller informed the consumer that he will be leaving on a shopping trip to San Francisco that afternoon, and asked the consumer if there was anything special she would like him to buy for her. The consumer requested a super two-wheel bicycle, a high status object among the nursery school children. The controller promised to purchase the bicycle along with any other items the consumer might think of before the controller departed for the city.

The procedure for the Child Consumer condition was identical with that described above except the child was the recipient of the material rewards and the social reinforcement. During the session the other adult sat at the opposite end of the room engrossed in a book, and was totally ignored by the controller. In discussing the prospective San Francisco shopping trip, the controller mentioned to the child that he was planning to visit some toy stores in the city that afternoon, and asked for suggestions of attractive toys he might purchase for future play sessions with children.

For half the boys and girls in each treatment condition the male model controlled and dispensed the resources, simulating the husband dominant family; for the remaining children the female model mediated the positive resources as in the wife dominant home.

At the completion of the social interaction session the controller announced that he had a surprise game in his car that the three of them could play together. The controller then asked the other adult to fetch the experimenter to assist them with the game, and as soon as the adult departed, the controller removed the toys and assembled the imitation task apparatus.

### *Imitation Task*

The imitation task was essentially the same two-choice discrimination problem utilized in an earlier experiment (Bandura & Huston, 1961), except the response repertoires exhibited by the models were considerably extended, and the procedure used in the acquisition trials was somewhat modified.

The apparatus consisted of two small boxes with hinged lids, identical in color and size. The boxes were placed on stools approximately 4 feet apart and 8 feet from the starting point. On the lid of each box was a rubber doll.

As soon as the other adult returned with the experimenter, the controller asked both the child and the experimenter to be seated in the chairs along the side of the room, and the other adult to stand at the starting point, while the controller described the game they were about to play. The controller then explained that the experimenter would hide a picture sticker in one of the two boxes and the object of the game was to guess which box contained the sticker. The adults would have the first set of turns, following which the child would play the guessing game.

The discrimination problem was employed simply as a cover task that occupied the children's attention while at the same time permitted observation of the models as they performed divergent patterns of behavior during the discrimination trials in the absence of any set to attend to or learn the responses exhibited by the models.

Before commencing the trials, the controller invited the other participants to join him in selecting a "thinking cap" from hat racks containing two identical sets of four sailor caps, each of which had a different colored feather. The controller selected the green feathered hat, remarked, "Feather in the front" and wore the hat with the feather facing forward. The other model selected the yellow feathered hat, commented, "Feather in the back," and placed the hat on her head with the feather facing backward. The child then made his choice from the four hats in the lower rack and it was noted whether he matched the color preference, hat placement, and the verbal responses of the one or the other model.

The models then went to the starting point, the child returned to his seat, and the experimenter loaded both boxes with sticker pictures for the models' trials.

During the execution of each trial, each model exhibited a different set of relatively novel verbal and motor responses that were totally irrelevant to the discrimination problem to which the child's attention was directed. At the starting point the controller stood with his arms crossed, but at the experimenter's warning not to look, the controller placed his hands over his eyes, faced sideways, and asked, "Ready?" The other model stood with his arms on his hips, then squatted with his back turned to the boxes, and asked, "Now?"

As soon as the experimenter gave the signal for the first trial, the controller remarked, "Forward march" and began marching slowly toward the

designated box repeating, "March, march, march." When he reached the box he said, "Sock him," hit the doll aggressively off the box, opened the lid and yelled, "Bingo," as he reached down for the sticker. He then remarked, "Lickit-sticket," as he pressed on the picture sticker with his thumb in the upper-right quadrant of a 24 × 24 inch sheet of plain white paper that hung on the wall immediately behind the boxes. The controller terminated the trial by replacing the doll facing sideways on the container with the comment, "Look in the mirror," and made a final verbal response, "There."

The other model then took her turn and performed a different set of imitative acts but equated with the controller's responses in terms of number, types of response classes represented, structural properties, and interest value. At the starting point, for example, she remarked, "Get set, go" and walked stiffly toward the boxes repeating "Left, right, left, right." When she reached the container she said, "Down and up," as she lay the doll down on the lid and opened the box. She then exclaimed, "A stickeroo," repeated, "Weto-smacko," and slapped on the sticker with the open hand in the lower-left quadrant of the sheet of paper. In terminating the trial, the model lay the doll on the lid of the container with the remark, "Lie down," and returned with her hands behind her back, and emitted the closing remark, "That's it."

The two sets of responses were counterbalanced by having the models display each pattern with half the subjects in each of the three groups.

The models performed alternately for four trials. At the conclusion of the fourth trial the controller explained that he had to check some materials in his car and while he and the other model were away the child may take his turns. Before they departed, however, the experimenter administered a picture preference test in which the models were asked to select their preferred picture from six different stickers pasted on a 5 × 8 inch card, after which the child was presented a similar card containing an identical set of stickers and requested to indicate his preference.

In addition to the introductory block of four trials by the models, the child's 15 total test trials were interspersed with three two-trial blocks by the models. The models were always absent from the room during the child's test series. This procedure was adopted in order to remove any imagined situational restraints against, or coercion for, the child to reproduce the models' responses. Moreover, demonstrations of delayed imitation in the absence of the model provides more decisive evidence for learning by means of imitation.

The models always selected different boxes, the right-left position varying from trial to trial in a fixed irregular order, and the controller always took the first turn. Although the models received stickers on each trial, the child was nonrewarded on one third of the trials in order to maintain his interest in the cover task.

At the beginning of each of the blocks of subjects' trials, the experimenter administered the

picture preference test and the selection of stickers that matched the models' choices was recorded. In addition, on the eighth trial the models removed their hats and hung them in different locations in the room. If the child removed his hat during the session and placed it along side one or the other of the model's hats, this imitative act was also scored.

At the completion of the imitation phase of the experiment, the children were interviewed by the experimenter in order to determine whom they considered to be the controller of resources, and to assess their model preferences. The latter data were used as an index of attraction to the models. In addition, for the children in the adult consumer condition, the session was concluded by providing them the same lavish treatment accorded their adult rival.

Children in the control group had no prior social interaction with the models but participated with them in the imitative learning phase of the study. The experimenter assumed complete charge of the procedures and treated the models as though they were naive subjects. This control group was included primarily to determine the models' relative effectiveness as modeling stimuli. In addition, the models alternated between subjects in the order in which they executed the trials so as to test for the possibility of a primacy or a recency of exposure effect on imitative behavior.

#### Imitation Scores

The imitation scores were obtained by summing the frequency of occurrence of the postural, verbal, and motor responses described in the preceding section, and the hat, color, and picture preferences that matched the selections of each of the two models.

The children's performances were scored by three raters who observed the experimental sessions through a one-way mirror from an adjoining observation room. The raters were provided with a separate check list of responses exhibited by each of the two models, and the scoring procedure simply involved checking the imitative responses performed by the children on each trial. In order to provide an estimate of interscorer reliability, the performances of 30% of the children were recorded simultaneously but independently by two observers. The raters were in perfect agreement on 95% of the specific imitative responses that they scored.

#### RESULTS

The control group data revealed that the two models were equally effective in eliciting imitative responses, the mean values being 17.83 and 20.46 for the male and female model, respectively; nor did the children display differential imitation of same-sex ( $M = 22.30$ ) and opposite-sex ( $M = 18.50$ ) models. Although children in the control group tended to imitate the second model ( $M = 22.21$ ) to

TABLE 1  
MEAN NUMBER OF IMITATIVE RESPONSES PERFORMED  
BY SUBGROUPS OF CHILDREN IN THE  
EXPERIMENTAL TRIADS

Subjects	Objects of imitation			
	Male	Female	Female	Male
	Controller	Consumer	Controller	Consumer
Girls	29.00	9.67	26.00	10.00
Boys	30.17	18.67	22.33	16.17
Total	29.59	14.17	24.17	13.09
	Controller	Ignored	Controller	Ignored
Girls	22.00	16.17	31.84	22.17
Boys	29.17	16.67	26.83	34.50
Total	25.59	16.42	29.34	28.34

a somewhat greater extent than the one who performed first ( $M = 16.08$ ) on each trial, suggesting a recency of exposure effect, the difference was not of statistically significant magnitude ( $t = 1.60$ ).

Table 1 presents the mean imitation scores for children in each of the two experimental triads. A  $2 \times 2 \times 2 \times 2$  mixed factorial analysis of variance was computed on these data in which the four factors in the design were sex of child, sex of the model who controlled the resources, adult versus child consumer, and the controller versus the other model as the source of imitative behavior.<sup>3</sup> As shown in Table 2, the findings of this study clearly support the social power theory of imitation. In both experimental treatments, 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 greater degree than was the rival or the ignored model ( $F = 40.61$ ,  $p < .001$ ). Nor did the condition combining resource ownership with direct reinforcement of the child yield the highest imitation of the model who controlled and dispensed the positive rewards. The latter finding is particularly surprising since an earlier experiment based on two-person groups (Bandura & Huston, 1961), demonstrated that pairing of model with positive reinforcement substantially enhanced the occurrence of imitative

<sup>3</sup> The assistance of Eleanor Willemsen with the statistical computations is gratefully acknowledged.

behavior. An examination of the remaining significant interaction effects together with the postexperimental interview data suggest a possible explanation for the discrepant results.

The differential in the controller-other model imitation was most pronounced when the male model was the controller of resources ( $F = 4.76, p < .05$ ), particularly for boys. In fact, boys who were the recipients of rewarding resources mediated by the female model tended to favor the ignored male as their object of imitation. In the postexperiment interview a number of boys in this condition spontaneously expressed sympathy for the ignored male and mild criticism of the controller for not being more charitable with her bountiful resources (for example, "She doesn't share much. John played bravely even though she didn't even share. . . . She's a bit greedy.").

As a partial check on whether this factor would tend to diminish the differential imitation of the two models, six children—three boys and three girls—participated in a modified Child Consumer treatment in which, half-way through the social interaction session, the ignored adult was informed that he too may have access to the playthings. He replied that he was quite content to read his book. This modified procedure, which removed the rivalry and the exclusion of the model, yielded four times as much imitation of the controller

relative to the model who was ignored by choice.

The significant triple interaction effect indicates that the differential in the controller-other model imitation was greatest when the same-sex model mediated the positive reinforcers, and this effect was more pronounced for boys than for girls.

The data presented so far demonstrate that manipulation of rewarding power had produced differential imitation of the behavior exhibited by the two models. In order to assess whether the dispensing of positive reinforcers in the prior social interaction influenced the overall level of matching responses, the imitation scores in each of the three groups were summed across models and analyzed using a Sex  $\times$  Treatment design.

The mean total imitative responses for children in the Child Consumer, Adult Consumer, and the Control group were 50.21, 40.58, and 37.88, respectively. Analysis of variance of these data reveals a significant treatment effect ( $F = 3.37, .025 < p < .05$ ). Further comparisons of pairs of means by the  $t$  test, show that children in the child rewarded condition displayed significantly more imitative behavior than did children both in the Adult Consumer treatment ( $t = 2.19, p < .05$ ), and those in the Control group ( $t = 2.48, p < .02$ ). The Adult Consumer and Control groups, however, did not differ from each other in this respect ( $t = .54$ ).

The model preference patterns were identical for children in the two experimental conditions and consequently, the data were combined for the statistical analysis. Of the 48 children, 32 selected the model who possessed rewarding power as the more attractive, while 16 preferred the noncontrolling adult. The greater attractiveness of the rewarding model was significant beyond the .05 level ( $\chi^2 = 5.34$ ). The experimental triad in which boys were the recipients of positive reinforcers while the male model was ignored, and the female consumer-girl ignored subgroup, contributed the highest preference for the noncontrolling adult.

In addition to the experimental groups discussed in the preceding section, data are available for 9 children in the Adult Consumer condition, and for 11 children in the

TABLE 2  
SUMMARY OF THE ANALYSIS OF VARIANCE OF  
THE IMITATION SCORES

Source	df	MS	F
Between subjects	47	310.17	
Sex of subjects (A)	1	283.59	<1
Sex of controller model (B)	1	128.34	<1
Adult versus child consumer (C)	1	518.01	1.61
A $\times$ B	1	23.01	<1
A $\times$ C	1	1.76	<1
B $\times$ C	1	742.59	2.31
A $\times$ B $\times$ C	1	21.10	<1
Error (b)	40	321.49	
Within subjects	48	113.24	
Controller versus other model (D)	1	2,025.84	40.61***
A $\times$ D	1	297.51	5.96*
B $\times$ D	1	237.31	4.76*
C $\times$ D	1	396.09	7.94**
A $\times$ B $\times$ D	1	256.76	5.15*
A $\times$ C $\times$ D	1	19.52	<1
B $\times$ C $\times$ D	1	23.02	<1
A $\times$ B $\times$ C $\times$ D	1	184.00	3.69
Error (w)	40	49.88	

\*  $p < .05$ .  
\*\*  $p < .01$ .  
\*\*\*  $p < .001$ .

Child Consumer treatment who revealed, in their postexperiment interviews, that they had actually attributed rewarding power to the ignored or the consumer adult despite the elaborate experimental manipulations designed to establish differential power status. A number of these children were firmly convinced that only a male can possess resources and, therefore, the female dispensing the rewards was only an intermediary for the male model (for example, "He's the man and it's all his because he's a daddy. Mommy never really has things belong to her. . . . He's the daddy so it's his but he shares nice with the mommy. . . . He's the man and the man always really has the money and he lets ladies play too. John's good and polite and he has very good manners.") This view of resource ownership within the family constellation was often directly reinforced by the mothers (for example, "My mommy told me and Joan that the daddy really buys all the things, but the mommy looks after things."). Children who attributed the resource ownership to the consumer or ignored female model had considerable difficulty in explaining their selection (for example, "I just knowed it does. . . . I could tell, that's how."), perhaps, because the power structure they depicted is at variance with the widely accepted cultural norm.

As shown in Table 3, models who were attributed rewarding power elicited approximately twice as many matching responses than models who were perceived by the children as possessing no control over the rewarding resources. Because of the small and unequal number of cases in each cell, these data were not evaluated statistically. The differences, however, are marked and quite

in accord with those produced by the experimentally manipulated variations in power status.

#### DISCUSSION

To the extent that the imitative behavior elicited in the present experiment may be considered an elementary prototype of identification within a nuclear family group, the data fail to support the interpretation of identificatory learning as the outcome of a rivalrous interaction between the child and the adult who occupies an envied status in respect to the consumption of highly desired resources. Children clearly identified with the source of rewarding power rather than with the competitor for these rewards. Moreover, power inversions on the part of the male and female models produced cross-sex imitation, particularly in girls. The differential readiness of boys and girls to imitate behavior exhibited by an opposite-sex model are consistent with findings reported by Brown (1956, 1958) that boys show a decided preference for the masculine role, whereas, ambivalence and masculine role preference are widespread among girls. These findings probably reflect both the differential cultural tolerance for cross-sex behavior displayed by males and females, and the privileged status and relatively greater positive reinforcement of masculine role behavior in our society.

Failure to develop sex appropriate behavior has received considerable attention in the clinical literature and has customarily been assumed to be established and maintained by psychosexual threat and anxiety reducing mechanisms. Our findings strongly suggest, however, that external social learning variables, such as the distribution of rewarding power within the family constellation, may be highly influential in the formation of inverted sex role behavior.

Theories of identificatory learning have generally assumed that within the family setting the child's initial identification is confined to his mother, and that during early childhood boys must turn from the mother as the primary model to the father as the main source of imitative behavior. However, throughout the course of development children are provided with ample opportunities

TABLE 3  
IMITATION AS A FUNCTION OF ATTRIBUTED REWARDING POWER TO THE MODELS

Treatment condition	Objects of imitation			
	Female controller	Male noncontroller	Male controller	Female noncontroller
Adult consumer	24.0	12.3	29.8	14.6
Child consumer	18.2	6.7	35.5	16.2

to observe the behavior of both parents. The results of the present experiment reveal that when children are exposed to multiple models they may select one or more of them as the primary source of behavior, but rarely reproduce all the elements of a single model's repertoire or confine their imitation to that model. Although the children adopted many of the characteristics of the model who possessed rewarding power, they also reproduced some of the elements of behavior exhibited by the model who occupied the subordinate role. Consequently, the children were not simply junior-size replicas of one or the other model; rather, they exhibited a relatively novel pattern of behavior representing an amalgam of elements from both models. Moreover, the specific admixture of behavioral elements varied from child to child. These findings provide considerable evidence for the seemingly paradoxical conclusion that imitation can in fact produce innovation of social behavior, and that within the same family even same-sex siblings may exhibit quite different response patterns, owing to their having selected for imitation different elements of their parents' response repertoires.

The association of a model with noncontingent positive reinforcement tends to increase the incidence of imitative behavior in two person groups (Bandura & Huston, 1961), whereas the addition of a same-sex third person who is denied access to desired rewards may provoke in children negative evaluations of the rewarding model and thereby decreases his potency as a modeling stimulus. These two sets of data demonstrate how learning principles based on an individual behavior model may be subject to strict limitations, since the introduction of additional social variables into the stimulus complex can produce significant changes in the functional relationships between relevant variables.

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