THE EFFECTS OF VERBAL INSTRUCTIONS ON IMITATIVE AGGRESSION

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THESIS

This is to certify that the

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ABSTRACT

THE EFFECTS OF VERBAL INSTRUCTIONS ON IMITATIVE AGGRESSION

by Gilbert Williams De Rath

Sixty nursery school boys were randomly assigned to three conditions. Subjects in one experimental group individually observed a five-minute film sequence of an aggressive model; a second experimental group received, during the film presentation, prohibitive verbal instructions regarding specific aggressive acts which the film model directed at an inflated clown. A control group did not see the film and received no instructions of any kind. Half of the subjects in each of the groups were randomly assigned to a neutral female experimenter in a doll play test situation which followed mild frustration designed to elicit aggressive behavior. Subjects were observed in doll play for a 20-minute period during which ratings were made of their behavior at five-second intervals. Over half of the subjects were rated by two independent raters in order to determine rater reliability. Ratings were made on 27 different behaviors which were broadly classified as Imitative Aggression, Partially Imitative Aggression, Non-Imitative Aggression, Non-Aggression, and Imitative Verbal Aggression. The latter category was eliminated because of poor sound transmission and the lack of intelligibility in the speech of these subjects.

It was predicted that boys exposed to an aggressive model would, following a frustrating experience, reproduce the aggressive behaviors of the model and would differ in this respect both from boys prohibited

from performing such acts and boys not exposed to the model. A second hypothesis was that boys who were verbally prohibited from performing the aggressive actions of the model would inhibit these acts in subsequent doll play. The third hypothesis concerned the generalization of effects of exposure to an aggressive model and the generalization of prohibiting instructions. It was expected that following frustration, subjects not receiving inhibiting instructions would display more aggression in the presence of the frustrator than in the presence of a more neutral figure of a different sex. Finally, it was expected that the effects of verbal prohibition on imitating of the model's aggressive behavior would be greater in the presence of the person invoking the prohibition than in the presence of a neutral experimenter.

The responses scored involved highly specific concrete classes of behavior and yielded high inter-scorer reliabilities, the rank correlation coefficients being in the .90s.

Subjects seeing the film without instructions clearly imitated the aggressive behaviors of the model following the mild frustration experience. These differences were generally highly significant. Those subjects who were prohibited during the presentation of the film were inhibited in imitating aggressive behaviors displayed earlier by the model.

As a test of generalization of the effects of exposure to the film and as a test of the generalization of prohibitive instruction, half of the subjects in each group were exposed to a "neutral" experimenter in doll play. The highly significant differences between the experimental groups on imitative aggression remains, indicating that both effects readily generalize. Subjects who viewed the film without prohibitive instructions displayed more aggression, both imitative and non-imitative,

in the presence of the experimenter who frustrated them. The difference is highly significant for non-imitative aggression, but only approaches significance for imitative aggression.

It was expected that the effects of verbal prohibitions would be greater in the presence of the person invoking the prohibition. However, the differences here were not significant, both groups receiving prohibitive instructions showing little imitative behavior.

The results were discussed in terms of a learning theory of displacement rather than other theories utilizing such concepts as "identification with the aggressor" or "defensive identification."

Approved Charles Harley
Major Professor

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By

Gilbert Williams De Rath

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To Gib and Rick

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THE EFFECTS OF VERBAL INSTRUCTIONS ON IMITATIVE AGGRESSION

INTRODUCTION

This is a study of the effects of verbal instructions on modeled aggressive behavior in nursery school boys. Studies in the area of aggression are important because of the critical role it plays in the process of socialization. The handling of aggression in children is a major problem area for many parents and is often the most frequent reason for referral in agencies treating children with behavior problems.

Recently several studies have appeared which show that imitation and modeling play important roles in the acquisition and expression of aggression. Other investigations suggest that the way to handle aggression is to make it abundantly clear through verbal means that the behavior in question is undesirable. The experimental procedure from the studies of modeling and aggression is combined with verbal instructions in the present investigation.

Theories of Aggression

Aggression has given rise to a tremendous volume of theory particularly since Freud, impressed by the sadistic and masochistic elements he found in all neurosis and by the events of World War I, viewed aggression as "an innate, independent instinctual disposition in man" (1950) that he called the death wish. Its object is the death and destruction of life. It forms the basis for masochism and, when turned outward, sadism. Freud's "new" instinct theory has met with considerable criticism (see Monroe, 1955). But many psychoanalysts have

followed Freud's theoretical scheme. Melanie Klein (1937) writes:

> The idea of an infant from six to 12 months trying to destroy its mother by every method at the disposal of its body, transformed in imagination into all kinds of dangerous weapons--presents a horrifying, not to say unbelievable picture to our minds. . . . But the abundance, force and the multiplicity of the imaginary cruelties which accompany these cravings are displayed before our eyes in early analysis so clearly and forcibly that they leave no room for doubt (pp. 187-188).

Other analysts feel that emphasis on instinctive features of hostility and aggression with their negative emotional experiences is one-sided. Among those who criticize the idea of an aggressive instinct are Harry Stack Sullivan, Sandor Ferenczi, Thomas M. French, Karen Horney, Clara Thompson, and Paul Schilder. In general, they take a more positive approach and stress the adaptive aspects of aggression. Schilder (1949), for example, talks about an instinct to action and mastery and holds that the tendency to construct and reconstruct cannot be separated from action and aggression. Schilder and some other theorists seem to discuss aggression as embracing all positive outgoing actions. Another group of theorists stress the reactive aspects of hostile aggression, i.e., behavior whose ultimate goal is injurious to another. Where Freud thought that aggression was an instinctual drive, the ultimate goal of which was a static state free from all tensions, i.e., a return to the womb, these theorists see the aim of aggression as a safeguard to the personality against the outer world.

Ackerman (1958) offers a convincing explanation for the striving for static equilibrium that Freud called the death instinct, writing:

> The striving for a static equilibrium can be understood as secondary process, a defensive avoidance of shock and frustration, or as an escape from psychic pain; that is, such behavior can be looked upon as an aspect of failure, defeat, or derailment of the life drive, rather than as a primary death instinct. In any case, the motivational constellations that Freud

> identified with his death instinct point dramatically to the connection between a striving for static equilibrium and retreat from life. The homeostatic process actuates and protects life. It does not foster fear and withdrawal from life (p. 72).

In discussing the homeostatic process, Ackerman departs from the usual concept of stability and states that it is:

> . . . closer to the truth to conceive that the exact purpose of homeostasis is to protect, not stability in any static sense, but rather a creative but controlled "instability"* of the organism in consonance with the necessary conditions for maturation and for expanding relations with the outerworld. In other words, in the interpretation of this concept I am shifting the emphasis to the exact opposite of the connotation of "staying the same." I am suggesting that "homeostasis," or the principle of dynamic equilibrium, signifies the capacity for creative, fluid adaptability to change, which at the same time assures that measure of coordinated control that prevents the organism from being overwhelmed by a barrage of stimuli in excess of the organism's capacity to accommodate. The principle thus reinterpreted is conceived as creative, controlled "instability"; it regulates response to experience not in order to maintain sameness, but rather to preserve a resilient capacity for change while preventing change from becoming too rapid--so rapid as to disintegrate resources for adaptation and growth. . . . I do not conceive aggression and destructiveness as the expression of a death instinct but rather as a derailment of healthy adaptation, a defense, a means of controlling environment, of counteracting frustration and anxiety, and of asserting the identity of the self in interpersonal situations (p. 70, p. 50).

The Frustration-Aggression Hypothesis

That aggression is a counteraction of frustration and anxiety has long been known. To name but a few, William James, McDougall and Freud, in their earlier writings, all noted that aggression was aroused by frustration. Before developing his theory of instincts, Freud regarded the tendency to seek pleasure and avoid pain as the basis mechanism in

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*"Instability" here is used to emphasize readiness for change.

all mental functioning. Whenever pleasure seeking or pain avoiding behavior was blocked, aggression was the "primordial reaction" and was directed toward persons or objects in the external world which were perceived as causing the frustration.

In 1939, Dollard, Doob, Miller, Mowrer and Sears presented their classical work on frustration and aggression as viewed in a learning theory framework. Their efforts as systematization and objectivity have made the study of aggression more accessible to experimental study. Since their early work, one writer (McNeil, 1959) has stated that studies in this area number well over a thousand of which at least 400 are experimental.

The learning theory orientation such as that used by Dollard et al gives greater attention to the origins of individual differences in the amount and quality of aggressive behavior. According to Sears (1961) who points out that the learning model:

> . . . makes no assumption about a quantum of internal instigation that must be uninhibitedly tapped. On the contrary, it presumes that whole classes of aggressive acts are learned as responses to many different stimulus situations. By stimulus generalization, these acts come to be evoked by great ranges of stimuli, both internal and external, including ones that are symbolic or have imaginal qualities only. By response generalizations, acts can shift from one action category to another (e.g., from physical to verbal) or from one psychological function to another (e.g., from overt action to imagination or fantasy). Indeed, the lability of expression is so great that even entirely novel stimulational settings and manipulanda seem able to elicit and provide a means of expression of aggressive acts. Each such setting has its own instigative value, deriving from direct reinforcements in the past, as well as from primary or secondary stimulus generalizations. This effective instigative value is a cumulation of both excitatory and inhibitory values (p. 469).

Dollard et al take as their point of departure the older notion that aggression is always a consequence of frustration. From this idea they develop a series of psychological principles relating to the strength of

instigation, the degree of inhibition, and the direction of aggression. Because the direct expression of aggression in our society is frequently prevented from occurring by a strong anticipation of punishment, aggressive impulses must be compressed, delayed, disguised, displaced, or otherwise deflected. The energies behind aggressive acts are not lost by being deflected away from the frustrating object.

Displacement of Aggression

Miller has developed a model for predicting behavior in approach-avoidance conflict situations, including those where display and/or control of aggression are involved. Miller's (1948) assumptions, which have been borne out in research, are as follows:

> (1) that the direct response to the original stimulus generalizes to other similar stimuli, with the amount of generalization becoming smaller the less similar the stimuli; (2) that the response which conflicts with the occurrence of the direct response to the original stimulus also generalizes to other similar stimuli, becoming weaker the less similar the stimuli; (3) that the gradient of generalization of the conflicting response falls off more steeply with dissimilarity than does that of the original response which it inhibits; (4) that when two or more incompatible responses are simultaneously excited, the one with the greatest response will be its strength minus that of any response incompatible with it which is excited at the same time (pp. 167-168).

In situations that involve aggression, the conflicting response tendencies are aggression and its inhibition for fear of punishment. It has been noted that observations and interview estimates of aggression do not correlate highly with fantasy aggression expressed in play (Kroner, 1951; Sears, 1950), correlations between these variables ranging from about .13 to .21. Returning to Miller's assumptions, one would expect aggressive responses and fear of punishment in the home to generalize to school and play situations. Situations will differ in their similarity to home conditions where the child is punished most directly for aggression.

A school situation, because teachers act as parental surrogates, will be closer to home on a stimulus generalization gradient than will a doll play situation. If the gradient of generalization for inhibiting aggression falls off more steeply, then the inhibition brought about by severe punishment would affect behavior toward the teacher; but not the doll play where it would increase aggression because of increased frustration.

Sears (1951) divided preschool boys into three groups based on severity of punishment in the home. The group receiving moderate punishment in the home showed the most aggression in school. The High and Low Punishment groups both showed about the same frequency of aggression in school. In a doll play situation, however, the most severely punished group showed more aggression than either of the others. The fear of punishment did not generalize to the doll play situation, so displaced aggression was permitted to appear.

A study by Hollenberg and Sperry (1951) lends support to the frustration-aggression hypothesis and Miller's assumptions about the displacement of aggression. From interviews Hollenberg and Sperry derived a measure of home frustration based on number and kinds of restrictive rules, such as forcing of the child, and the like. Mothers were divided into high and low frustration categories. Thirty children from these homes were observed in free doll play and their aggressive responses measured. Children who were highly frustrated in the home showed more aggressive behavior in doll play. The differences between the high and low frustration groups, however, were not statistically significant. In general, while frustration may lead to fantasy aggression, these writers felt that other factors must also be considered. More conclusive results were obtained when another factor, the severity of punishment for aggression the mothers inflicted on their children, was taken into consideration. A measure of punishment for aggression based

on an interview-rating of frequency, intensity, and duration of spanking, threatening, isolation, denying privileges, and derogating the child was also available. Hollenberg and Sperry then subdivided each of the two original groups into a low and a high punishment group. Thus a given child might be, to use initials, Low P-Low F, Low P-High F, High P-Low F, or High P-High F. When this distinction is made, the difference among the groups, not significant when frustration alone was considered, became more clear-cut. High frustration and high punishment led to the greatest doll play aggression, low frustration and low punishment to the least.

Imitative Aggression

In their book on social learning and imitation, Miller and Dollard (1941) developed the notion that changes in the child's social behavior can be explained on the basis of social imitation properly related to general principles of learning. Their reinforcement hypothesis is as follows: (1) the child is motivated to action by an internal drive; (2) he sees someone else satisfying a comparable drive in certain ways--this pattern of behavior is a cue for an imitation response; (3) the child attempts to copy this behavior and the response may be rewarded and thus reinforced. On subsequent occasions when motivated by this drive, he has a tendency to repeat the response which he previously imitated from another person's behavior. Miller and Dollard have presented a number of controlled observations and experiments which appear to support this hypothetical paradigm of the socialization process.

While imitation or modeling can play a positive role in social development, it can also have deleterious effects depending on the type of behavior that is modeled. Newspaper accounts, for example, often mention children or teenagers learning deliquent behavior from television, comic books, or movies. In the home, parents serve as models

of undesirable as well as desirable behavior. A part of the reason for this would be incidental learning, i.e., learning that takes place without intent or set to learn. Sears, Maccoby and Levin (1957) make the point that parents often automatically react aggressively to aggression in their children, who are more likely to be punished for aggression than for any other undesirable behavior. The children's aggressive behaviors can act as a frustrating stimulus for parents who respond with counter-aggression.

Punishment, which serves to connect anxiety and aggression and eventually have a localized inhibiting effect, also provide the child with an aggressive model after which he can pattern himself. Parents can act as aggressive models just as can aggressive characters in films, comic books, and television. In this way punishment both inhibits and instigates aggressive behaviors. Bandura and Huston (1961) summarize this relationship as follows:

> . . . when a parent punishes a child physically for having aggressed toward peers, the intended outcome of the training is that the child should refrain from hitting others. Concurrent with the intentional learning, however, a certain amount of incidental learning may be expected to occur through imitation, since the child is provided, in the form of the parent's behavior, with an example of how to aggress toward others and this incidental learning may guide the child's behavior in later social interactions (p. 311).

Bandura has investigated imitative learning from a variety of angles, including aggression. One experiment (1961) involved preschool children who performed a two-choice discrimination problem and a model who exhibited unusual, irrelevant, non-functional divertive behaviors in the solution process in addition to the orienting tasks typical of incidental learning studies. Half of the children observed a model who aggressed against dolls as a part of the diverting behavior while the other half observed a non-aggressive model. Both groups were further divided

so that half of each group had a warm rewarding interaction with the model while the other half experienced a cold and non-nurturant relationship. (Previous experiments have shown that nurturance promotes identification. Mowrer (1950) suggests that affectional rewards increase secondary reinforcing properties of the model for the satisfaction these cues provide.) It was predicted that children who experience a warm, rewarding interaction with the experimenter would imitate more of the behaviors performed by the model than those children who experienced a colder, more distant relationship. The findings indicated that, in the presence of the model, the children imitated the behaviors of the model. Warmth in the relationship facilitated modeling except for aggressive behavior, which was readily imitated by all subjects regardless of the warmth in the relationship. Children who experienced a warm nurturant relationship also exhibited more pre-solution conflict behavior.

Bandura, Ross, and Ross (1961), observing the facility with which aggressive behaviors were imitated, investigated the generalization of imitative response patterns to new settings in which the model was not present. Pre-schoolers were divided into three groups. One group observed an aggressive model, another observed inhibited non-aggressive models and the third, a control group, was not exposed to models. Children exposed to aggressive models exhibited more imitative and non-imitative aggression in a different environmental situation. Another study by these investigators (1963) investigated the extent to which film-mediated aggressive models serve as sources of imitative behavior. Aggressive models can be ordered on a reality-fictional stimulus dimension, thus pre-school children were divided into three experimental groups and exposed to three models, each occupying a different place on the continuum. One group observed a live aggressive model, a second group observed a film of the same model, while a third group viewed a film depicting an aggressive cartoon character. Experimental subjects

exhibited nearly twice as much aggression as control subjects who were not exposed to models. Exposure to aggressive humans on film was the most influential in terms of eliciting imitative aggressive behavior.

Mussen and Rutherford (1961) also investigated the effects of aggressive cartoons on childrens' aggressive play, finding that exposure to an aggressive animated cartoon served to stimulate the intensity of first graders' impulses to aggression.

Hypotheses

The present study concentrates upon the effectiveness of verbal controls on aggression shaped by exposure to an aggressive model. Since parents and others responsible for learning experiences in this area expect their efforts to generalize to other situations when they are not present, a situation is provided so that generalization of aggression can be studied. First, it is predicted that boys exposed to an aggressive model will, following a frustrating experience, reproduce the aggressive behaviors of the model and will differ in this respect from boys not exposed to the model. This hypothesis has been successfully tested by Bandura, Ross, and Ross (1961) but replication of their findings is necessary to check on the present experimental procedures.

The second hypothesis is that boys who are verbally prohibited from performing the aggressive actions of the model will inhibit these acts in a subsequent situation following frustration, and that they will differ in this respect from subjects exposed to the model without receiving instructions and controls not exposed to the aggressive model.

The third hypothesis concerns the generalization of effects of exposure to the aggressive model and the generalization of prohibiting instructions. Following frustration, subjects not receiving inhibiting instructions should display more imitative and non-imitative aggression

in the presence of the frustrater than in the presence of an experimenter of the opposite sex.

Finally, it is predicted that the effects of verbal prohibition on imitation of the model's aggressive behavior will be greater in the presence of the person invoking the prohibition than in the presence of a neutral experimenter.

METHOD

Subjects

The experimental design replicates many of the features of Bandura's studies. Bandura's findings indicate that aggression is differentially influenced by the sex of the model. Boys exhibited more aggressive behavior than girls when exposed to a male model. To maximize imitative aggression, only boys were used in this study. The subjects were 60 boys attending the Spartan Cooperative Nursery School at Michigan State University. They ranged in age from 36 to 66 months with a mean age of 51.6 months.

The author and four female assistants conducted the study.

Experimental Design

All of the boys in the experimental groups were exposed to a 5-minute film of an aggressive male model. One experimental group was specifically prohibited from behaving like the model. As a test of generalization, half of the boys receiving such instructions and half of those not receiving instructions were exposed to a new experimenter in the test situation. The subjects were assigned randomly to the experimental groups as shown in Table 1.

The number within each cell refers to the number of subjects exposed to the experimental variables listed to the left and above it. The control group was not exposed to the film and received no instructions. Half of the group was exposed to a male tester and half to a female tester. All subjects in this group will be used as a base line for examining the effects of exposure to an aggressive model on subsequent aggression.

Table 1. Allocation of Subjects to Experimental Groups

Groups	Pretest Treatment		Number of Subjects in Doll Play	
	Model	Instructions	E Same as Pretest	E Different from Pretest
Experimental	Yes	Prohibitive	10	10
Experimental	Yes	None	10	10
Control	No	None	10	10

Experimental Conditions

In the first step of the procedure, the author brought individual subjects to the experimental building located across the street from the nursery school. The author had spent at least two nursery school sessions with each class group in order to increase rapport. When they were later asked to come to the experimental building, subjects understood that there were toys there that they were going over to play with. Experimental subjects were told on the way over that they would see a movie and attempts were made to secure their interest.

The experimental subject entered the building from a door that put him immediately into the room where he would see the film. He could not see the other rooms used later in the experiment. The child was seated at a small table where there were a number of Colorforms Toys, shown how these toys worked, and told a story connected with the Colorforms. When adequate rapport was established, the subject was told that he was now going to see the movie. The movie and sound track was started by the author who acted as experimenter for all subjects in the pretest situation. The film with sound track used in the present study was obtained from Bandura and is representative of films used in his studies on imitative aggression. The film is in color and lasts

a little more than five minutes. There are four specific behaviors which the model performs in the film and these four behaviors are repeated twice in the five-minute period. In the first sequence, the adult male model says, "Out of my way, you funny clown. I said out of my way. I'll fix you. I'll sit on you and punch you in the nose." He proceeds to sit on an inflated plastic clown (Bobo doll) which is about four feet high and punches him in the nose. This sequence lasts about 15 seconds. The model then says, "Still here for more. I'll pick up that mallet and hit you in the nose." While saying, "Bang, bang . . . Sock you down" etc., the model strikes the Bobo doll with the mallet for 35 seconds. The model then states, "I don't know what to do with you. I know what I'll do. Kick you! Right across the room. Fly away . . . fly away you funny clown." etc. After 15 seconds of kicking the doll, he says, "I'll pick up those balls and hit you in the head . . . throw them at you . . . Bang . . . Boom!" He throws the balls and verbalizes for 45 seconds. The model then duplicates these four aggressive acts again in the same sequence. He sits and punches the Bobo for 30 seconds; then strikes him in the nose with the mallet for 30 seconds; kicks him for another 40 seconds; and finally spends a full minute throwing the balls at him.

Prohibitive Instructions: During and following the movie, the prohibitive instructions were given to the Prohibitive Group. These instructions, which were essentially the same for each subject, were given in a conversational way to the child as follows: "Look what he's doing! You wouldn't act like that, would you? . . . He's hitting him with a mallet and he (Bobo) didn't do anything. I couldn't allow you to act that way . . . if you did, I'd have to take you back and you couldn't come again. He shouldn't do that. . . . Spartan Nursery School children wouldn't act that way. Mrs. _____ (S's teacher) wouldn't like it if you acted like that. He shouldn't act that way--hitting toys and

saying things like that. You wouldn't do that, would you? I would have to send you back to nursery school if you did."

The instructions were as uniform as possible from subject to subject. The verbalization followed the action of the film and were given in a way similar to that used by parents using verbal prohibitions. Care was taken so that the instructions did not overlap with the model's verbalizations. Most of the subjects were quite involved with the film and when instructions were given, they would respond by agreeing with the prohibitions outlined by the experimenter. Following the film, the experimenter briefly repeated that he knew that the subject would not act like the man in the film and that that was a very bad way to act. No further instructions or comments were made to the subject regarding the film or their behavior for the remainder of the experiment.

Subjects not receiving prohibitive instructions were treated the same as prohibitive subjects up until the time the film began. The author maintained rapport with the subject by looking at the film and describing the action briefly at intervals in as neutral a way as possible. Carefully avoided were any indications of approval, such as signs of enjoyment of the model's actions in the film, giving permission to act like the model, or other expressions that might affect subsequent behavior. If the subject's attention wandered from the film, he was encouraged to watch what was happening on the screen.

Aggression Arousal: Following exposure to the film, the subject was told that the author had other toys and asked if he wanted to see them. All of the children readily agreed and were taken to a separate room for aggression arousal. This room, decorated with balloons and cut-outs on the wall, contained a variety of toys that would be especially appealing to boys in this age group (see Figures 1, 2, 3, and 4). There was an electric train that the boys were shown and encouraged to operate;

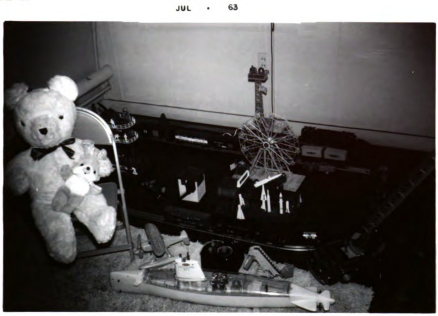

FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

a moving ferris wheel; an electric submarine; a battery operated rocket launcher; a miniature castle with soldiers and horses; various large construction toys including a motor grader, road scraper, cement mixer, and trucks. There was also two large fire engines, a large rocket launcher, and a variety of stuffed toys.

Most of the subjects became involved in operating the train, the rocket launchers, or the large trucks. The author left the room after introducing the toys and showing how they operated. The subjects usually became quite engrossed in play activities and after about five minutes, the author returned and told the subject that, "These are my very best toys and I cannot let just anyone play with them. I'm saving these for someone else who is coming later. I have to keep them nice for 'Mike' and I just can't let you play with them." Most of the subjects were very reluctant to leave the room and many asked if they could complete play activities that they had begun. However, the author made it a rule that the subjects left the room immediately. The subjects were told that there were other toys in another part of the building and that they could play with these toys. The subjects were then taken to the other end of the building and introduced to the test situation.

Doll Play

Half of the subjects in each of the two experimental groups were introduced to a new experimenter for the doll play test situation. These subjects were chosen at random. In order to maximize differences in experimenters, the new experimenter was of the opposite sex. When the subject was introduced to the new experimenter, he was told that "This is Miss _____. She will stay with you while I go and fix the projector. There are a lot of toys here and you can play with any of them you like." The author then left the room.

The room used for doll play contained a variety of toys and included among them were those seen in the film (see Figures 5, 6, 7, and 8). These included a large Bobo doll, balls, a tether ball suspended from the ceiling, and mallets. Other toys available for the subject included a small house with a family of rubber dolls; an Etch-A-Sketch toy; a mechanical tank; a dart gun; a mechanical ray gun; Colorforms; a small wooden train and track; miniature cars and trucks with a garage; airplanes and hangar; a take-apart car; and stuffed animals. The toys were arranged in a standard fashion for all subjects.

The play room was equipped with a transparent mirror and microphones. The behavior of the subjects was rated during the 20-minute test period in terms of predetermined response categories. The test session was divided into five-second intervals by an electronic interval timer which emitted a beep sound heard only by the raters, giving 240 response units for each subject. The raters remained in the observation room during the experiment and had no knowledge of pretest experimental conditions. The author acted as a second rater for some of the subjects who were exposed to the new experimenter in doll play. In no instance did he make ratings alone. In those cases where a new experimenter was introduced for doll play, the author would reappear after the 20-minute rating period to return the subject to the nursery school.

During doll play, the experimenters avoided initiating any interaction between the subject and themselves and minimized their presence by busying themselves at a table on one side of the room. Efforts were made to standardize the behavior of the experimenter in this test situation as much as possible. Most of the subjects busied themselves with toys immediately upon entering the room and many of them conversed freely with the experimentar who was present. One subject refused to stay for the whole twenty minute test period and another subject in the control group would not leave his mother who helped bring him. Both subjects were eliminated from the study.

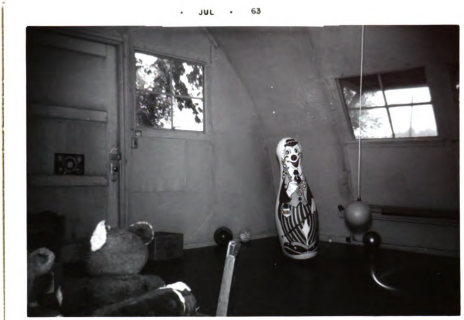

FIGURE 5

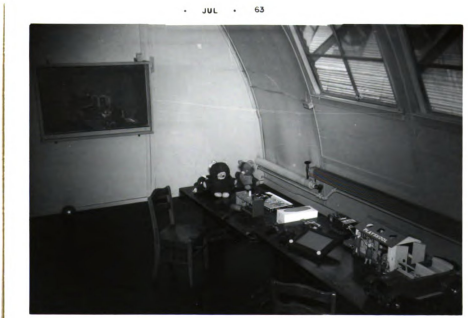

FIGURE 6

FIGURE 7

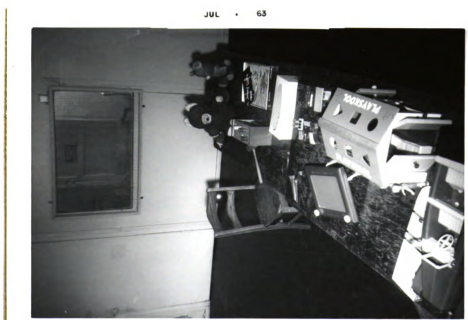

FIGURE 8

Behavior Measures

The response measures used in the present study fall into four categories. These cover imitative aggression, partially imitative aggression, non-imitative aggression, and non-aggression. Attempts were made to secure measures of verbal aggression, both imitative and non-imitative, but a number of factors led to the discarding of these variables. Often raters were not able to hear clearly because of defects in the sound system, extraneous noises, and/or the quality of the subject's speech. The behavior categories which were checked when present are as follows (adapted from Bandura):

No Play

Child does not handle any of the play material, e.g., stands or sits quietly, looks about the room, etc.

Ball

Rolls or plays catch with the ball, or uses it in some other non-aggressive fashion.

Bobo

The following responses directed toward the Bobo doll constitute imitative aggressive responses:

Mallet--child strikes, taps, or shoves Bobo with the mallet.

Ball--child rolls a ball toward, or tosses it at Bobo.

Kick--child kicks or shoves Bobo with his foot.

Sit and Punch--child punches, taps, or slaps Bobo while sitting or lying on it.

Sometimes children combine two imitative responses in a single act, e.g., child sits on Bobo and pounds it with the mallet. . . , child strikes Bobo with the mallet and kicks it simultaneously. These acts are double scored--

in the first example, the Mallet and the Sit and Punch categories are checked; in the second example, the Mallet and the Kick categories are checked.

The following are non-imitative classes of aggressive responses toward Bobo:

Punch--child punches, taps, slaps, shoves or wrestles Bobo.

Strikes--child strikes, taps, or shoves Bobo with any object other than the mallet, e.g., jabs Bobo with darts, pokes it or strikes it with a gun, doll, etc.

Non-aggressive responses toward Bobo doll:

Sit--child sits on Bobo, bounces up and down with it, lies or rolls on it.

Non-aggressive--child embraces Bobo, carries it around, dances with it, stands alongside Bobo with his arm around it, etc.

Tether Ball

Mallet--child strikes the tether ball with the mallet.

Bobo--child strikes Bobo with the tether ball.

Other--child punches or slaps the tether ball, slams it against the wall; strikes it with objects other than the mallet.

Non-aggressive--child swings on the ball, spins it, moves in an arc, examines it, etc.

Guns

Explores or loads--child examines the gun, loads it, carries it in his hand.

Shoots--child fires darts, or aims the gun and shoots imaginary bullets. Check the Bobo category when the doll is the target and the other category when any other object is selected as the target (e.g., shoots at the wall, the animals, the cars, the tether ball, etc.).

Non-Aggressive Play

This category includes all non-aggressive play with the doll house, the dolls, the bears, the cars, and the farm animals.

Peg Board

Aggressive--child pounds the pegs with the mallet.

Non-aggressive--examines the peg board, attempts to pull out or punch in the peg with his hand.

Other Non-Imitative Aggressive Responses

This category included physically aggressive acts directed toward the farm animals, the dolls, or the cars, e.g., reenacts fights between the animals or the dolls, spanks or aggresses in other ways toward the dolls, crashes the cars, or runs them into the animals, etc.

Other Imitative Responses

Child places his hands on his hips; shakes finger at the Bobo doll.

The time units were very brief so that during any interval the child usually exhibited behavior that fell within a single response category. If a child displayed behavior that fell within two or more categories, the raters checked only the response that consumed most of the time during the scoring interval. There were several exceptions to this scoring rule:

1. When a child combined two imitative responses in a single act, raters checked both of the imitative response categories.

2. When a child performed an imitative aggressive response and a non-imitative aggressive response, they checked both categories.
3. When a child exhibited non-aggressive behavior during most of the time interval but performed some imitative or non-imitative aggressive act, they scored only the appropriate aggressive response category.

RESULTS

Before giving the results as they relate to the hypotheses discussed earlier, a section will be devoted to reliability of observed ratings. Following this, results will be discussed.

Rater Reliability

Bandura (1961) reports interscorer reliabilities in the .90s for the highly specific concrete classes of behavior used as response measures in his experimental test situation. These same response measures were used in the present study. High interscorer reliabilities similar to those obtained by Bandura were found between raters in the current study. In order to provide an estimate of rater reliability, over half of the subjects were observed and rated by two trained raters. No one rater rated one experimental condition exclusively. The raters alternated with one another in a random way and all of the raters served as experimenters at one time or another in the experimental test situation. The author never rated subjects alone.

The analysis of the data reported in the next section is concerned with three scores for each subject. These scores represent total imitative aggression, total non-imitative aggression, and total non-aggression. The imitative aggression scores combines both aggressive behavior exhibited by the subjects which exactly imitates the aggressive behavior of the model and partially imitative aggression, such as, striking the tether ball with a mallet rather than Bobo. Non-imitative aggression includes aggressive behaviors such as shooting or punching the Bobo doll. The total imitative aggression score is the sum of the subject's scores on the four response categories of imitative aggression

and the four categories of partially imitative aggression. The scores on the response categories represent the number of times the rater checked the behavior in question as being present during the doll play. Ratings were made of the child's behavior every five seconds and there was a total of 240 five-second periods in the doll play session. Scores on any response category could vary from 0, if the child never performed the act in question, to 240, which indicates that the child performed the behavior in question during the entire doll play situation. The total non-imitative aggression score is the sum of the six response categories involving aggression which does not resemble that of the model. The total non-aggression score is the total number of five-second periods checked by the rater in which the child played in a non-aggressive way. There are six categories of non-aggressive behavior.

Three of the raters, A, B, and C, accounted for nearly all of the doll play sessions where a single rater was involved. Because the accuracy of outcomes depends greatly upon their ability as raters, rank correlation coefficients were computed for each rater versus their co-raters D and E. (Appendices D, E, and F. show total scores and ranks for Raters A, B, and C and their co-raters on the three scoring categories.) In Table 2 below, rank correlation coefficients are reported for these three raters and their co-raters on the three major response categories.

Table 2. Rank Correlation Coefficients for Raters A, B, and C on the Three Response Categories

	Imitative Aggression	Non-Imitative	Non-Aggression
Rater A:	1.00	1.00	.99
Rater B:	.99	.99	1.00
Rater C:	.99	1.00	1.00

Another rank correlation coefficient was computed between Raters A, B, and C combined and Raters D and E (see Appendix G). There were 24 subjects who were rated by Raters A or B or C and co-rated by D or E. The rank correlation coefficients are again quite high. For imitative aggression, the rank correlation coefficient is .91; for non-imitative aggression, it is .99; and for non-aggression, it is also .99.

While there was some variation between raters within the finer response categories, i.e., within the 20 classes of behavior that were scored, even here the inter-rater agreement is remarkably high. Ranking the scores tends to eliminate minor variations and indicates that the raters are in high agreement as to the level and amount of the behavior the subjects exhibited in the three major scoring categories.

Imitation of the Model's Behavior

Subjects who were exposed to the film of the aggressive model and received no instructions displayed a great deal more imitative aggression than either the prohibitive group or the controls. Nineteen of the 20 boys seeing the film without instructions displayed some imitative aggression while only 12 of the controls and six of the prohibitive group did so.

Using a similar film, Bandura (1961) found that very few children who had not been exposed to the film exhibited behavior similar to that of the model. Approximately 70 per cent of his subjects not seeing the film had zero imitative aggression scores. In the present study, mean scores for boys seeing the film without prohibitive instructions are more than three times as large as those of boys in the control groups (Table 3). Differences between the film group, prohibitive group and controls on total imitative aggression is highly significant using a two-tailed test (Table 4). The differences are also apparent when film groups

Table 3. Mean Scores for the Experimental and Control Subjects on the Three Major Response Categories

Response Categories	Experimental Group: No Instructions	Experimental Group: Prohibitive Instructions	Control Group
Imitative Aggression			
(Same) Experimenter	15	.2	.6
(Different) Experimenter	9.4	.2	.8
Combined	12.2	.2	.7
Partially Imitative Aggression			
(Same) Experimenter	24.2	4.6	6.3
(Different) Experimenter	8.2	2.0	10.7
Combined	16.2	3.3	8.5
Total Imitative Aggression			
(Same) Experimenter	39.2	4.8	6.9
(Different) Experimenter	17.6	2.2	11.5
Combined	28.4	3.5	9.2
Non-Imitative Aggression			
(Same) Experimenter	155.8	98.1	154.1
(Different) Experimenter	62.1	123.6	118.8
Combined	108.9	110.8	131.4
Non-Aggression			
(Same) Experimenter	67.8	147.3	94.3
(Different) Experimenter	168.1	119.9	108.5
Combined	117.9	133.6	101.4

Table 4. Significance of Differences (H-Test) Between Experimental Groups and Control Groups in the Expression of Imitative and Non-Imitative Aggression.

Response Category	Test Situation: Same Experimenter P	Test Situation: Different Experimenter P	Test Situation: Combined P
Imitative Aggression	.001*	.01*	.01*
Non-Imitative Aggression	.05*	n.s.	.05
Non-Aggression	n.s.	.02	.05*

*Corrected for tied ranks.

who had a new experimenter in doll play and those having the same experimenter throughout are compared with subjects receiving prohibitive instructions and controls (Table 5).

Table 5. Significance of Differences Between Groups in the Expression of Aggression (Mann-Whitney Test)

Experimental Groups	Response Category			
	Imitative Aggression		Non-Imitative Aggression	
	U	p	U	p
Film vs. Prohibitive				
Same Experimenter	11	.02	30.5	n.s.
Different Experimenter	8	.002	23	.05
Combined	42	.002	199	n.s.
Film vs. Control				
Same Experimenter	13	.02	48.5	n.s.
Different Experimenter	30.5	n.s.	19.5	.02
Combined	92.5	.02	141.5	n.s.
Prohibitive vs. Control				
Same Experimenter	38.5	n.s.	31	n.s.
Different Experimenter	31.5	n.s.	49.5	n.s.
Combined	137.5	.10	159.5	n.s.

Effects of Verbal Instructions

The most significant differences on imitative aggression occurred between the groups seeing the film without prohibitive instructions and the groups who received such instructions (Table 5). These groups differ significantly both when the same experimenter remained in the test situation and when a different non-frustrating experimenter is substituted.

When film groups are compared with controls, similar significant differences in favor of the film groups again appear except for groups having a different experimenter in the test situation. The value of U in

this instance is 30.5 and it would need to be 23 to reach the .05 level of significance.

Examination of individual scores shows that all 10 subjects in the film group who had a different experimenter in doll play showed some imitative aggression. Their mean score was 17.6. Only six of the controls displayed aggression similar to that displayed by the model. Their mean score was 11.5. One of the subjects in the control group had a score of 53 in the partially imitative aggression category for sitting on Bobo. This was the only imitative aggression he displayed and he was the second lowest on total aggression; yet his score on total imitative aggression was the highest in the group. His sitting on Bobo artificially inflated the mean of his group and though he exhibited partially imitative aggression, he apparently was not as aggressive as most of those seeing the film.

It seems clear that while exposure to an aggressive model has a definite effect on the shaping of aggression following frustration and this effect generalizes to new situations, it can be controlled by prohibitive instructions directed at specific behaviors of the model.

Subjects receiving prohibitive instructions during exposure to the film consistently showed less total imitative aggression than those seeing the film without instructions and those in the control group (Table 3). The controls showed nearly three times as much total imitative aggression as the prohibitive groups and the film groups without instructions showed more than three times as much as the control groups. Again the most outstanding differences occur between groups seeing the film without instructions and the prohibitive groups. The prohibitive and control groups did not differ significantly when a U Test was applied to ranks. The effects of instructions on the prohibitive group were quite dramatic. While only one subject of the twenty not receiving instructions failed to imitate the model, thirteen of the prohibitive group were inhibited from

doing so. Specific verbal instructions have a very significant inhibitory effect on subsequent imitative aggressive behavior following frustration. Though there were differences in non-imitative aggression related to new experimenters in the test situation, both the film groups and the prohibitive groups showed a very similar amount of non-imitative aggression. The prohibitive instructions had effects which were quite specific to aggression against the Bobo doll.

Generalization of Imitative Aggression

Subjects who viewed the film without prohibitive instructions displayed more aggression, both imitative and non-imitative, in the presence of the experimenter who frustrated them (see Table 3). The differences are highly significant when non-imitative aggression is considered, while differences on imitative aggression only approach significance (see Table 6).

Table 6. Significance of Differences in Expression of Aggression and Experimenters in Doll Play

Experimental Groups	Response Category			
	Imitative Aggression		Non-Imitative Aggression	
	U	p	U	p
Film - No Instruction				
Same vs. Different Experimenter	25	.05-.10	2	.002
Film - Prohibitive Instruction				
Same vs. Different Experimenter	42.5	n.s.	38.5	n.s.
Controls				
Same vs. Different Experimenter	50	n.s.	32	n.s.

Generalization of Prohibitive Instructions

It was hypothesized that those subjects given prohibitive instructions would display greater inhibition of prohibitive acts in the presence of the experimenter who gave the prohibition. While it is clear that these instructions had a pronounced inhibitive effect on both imitative and non-imitative aggression (Table 3), there is only a slight trend, contrary to hypothesis, for subjects to display more partially imitative aggression in the presence of the experimenter who prohibited them and later frustrated them. The differences between the groups having the same experimenter in doll play and those having a new experimenter is not significant on either imitative aggression or on non-imitative aggression. Both of the groups who were given prohibitive instructions displayed very little imitative aggression of any kind. However, the prohibitive group having a different experimenter showed significantly more non-imitative aggression than the experimental group not receiving instructions who had a new experimenter in doll play. Comparison of mean scores on non-imitative aggression between prohibitive and control groups having a different experimenter suggest that the effect in question is taking place in the film subjects not receiving instructions who had a new experimenter in doll play.

DISCUSSION

The major focus of this study has been on the effects of prohibitive instructions on imitative aggression in nursery school boys. Bandura (1961) has shown that preschool children exposed to an aggressive model will, following instructions, reproduce a good deal of aggression resembling that of the model. The present study incorporates many features of Bandura's study and provides additional evidence regarding the effectiveness and importance of imitation in social learning.

Subjects in his study who observed a model performing specific aggressive acts later reproduced them when the need for aggression was present. Bandura suggests that mere observation of aggression regardless of the quality of the model-subject relationship is a sufficient condition for learning of imitative aggression in children. He has demonstrated that children will imitate the aggressive behavior of a number of types of models including nurturant, non-nurturant, and neutral. Other studies have shown that cartoon figures may also act as models for subsequent aggression. With the wide variety of opportunities for observing aggressive behavior performed by potential models in the home, neighborhood, and on television, in films, and in comic books, etc., the control of imitative aggression is critical.

Current thinking among those psychologists concerned with psychologically healthy patterns of child rearing suggest that an effective way of handling aggressive behavior in children is to make it clear that such behavior is undesirable. This approach was taken in the present study where prohibitive verbal instructions were given to the subject relating to specific acts of aggression being performed by the model. These instructions were contiguous with the acts being performed by the model. In doll play following a frustrating experience, children who received

these instructions while seeing the film inhibited the aggressive behavior specified in the instructions. With prohibitive instructions, imitative aggression scores of subjects in the experimental group dropped to a level even lower than those of controls who occasionally by chance imitated some of the behaviors of the model. Many of the prohibited subjects carefully avoided the Bobo doll altogether, so that no imitative aggressive responses occurred.

The following comments by the raters illustrate the behavior of some of the children who had received prohibitive instructions. The comments dramatically reflect the inhibiting effects of the instructions.

> "Fascinated by Bobo. Would come over to the clown and, particularly in the beginning, some imitative aggression would leak out. Showed visible restraint however. Said, 'It's not nice to punch clown,' and 'What's this?' giving the clown a half-restrained punch. Showed lots of curiosity about Bobo. Asked if mallets were to hit the clown. Would say 'You. . . .' and not complete the phrase to the clown."
>
> "When S came in, he said, 'You're not supposed to punch him in the nose hard.' Generally avoided the side of the room with Bobo except for shooting at him. In the middle of the session, S said, 'Is that the one the guy was hitting?'"
>
> "'I'm not going to do like that guy in the picture. I'm just going to shoot him.'"
>
> "S said he wanted to kill the clown and then went over and hugged it. He shot at the clown most of the time but when he went near it, he would pat it. Kissed the clown. On leaving, said, 'I love those toys,' indicating those used during the frustration sequence in the other room."
>
> "S said, 'Could I hit that awhile?' indicating Bobo; but when told that he could, he didn't touch it. S avoided the side of the room where Bobo was standing."

"Child at very first half punched Bobo and then hugged the clown. Later he really let go by picking up and heavily dropping the clown. Used Bobo like a bat to hit the tether ball."

"S looked at the clown and then looked quickly away. For the first half of the test session, he didn't go near the half of the room where the clown was."

While there was wide variation in behavior among the subjects receiving prohibitive instructions, it seems clear that an inhibitory effect was operating. This effect seemed to operate in various ways, including displays of affection for Bobo strongly reminiscent of reaction formation, obvious introjection of the experimenter's prohibition which some of the subjects repeated aloud to themselves, and channeling of aggression along lines other than those specifically prohibited by the experimenter. The presence of the experimenter who gave the prohibitive instructions tended to increase inhibition of all forms of aggression, but effects of instructions were also highly significant in the absence of the prohibitor.

Rosenblith (1959) in a study of imitative learning found that male experimenters were more effective than females in influencing children's behavior. She suggests that this may be due to increased reward value of male figures resulting from their relative absence in most of the child's day to day experiences. In the present study, subjects tended to display more aggression, both imitative and non-imitative, in the presence of the male experimenter except for the prohibitive group, who showed greater inhibition of non-imitative aggression in his presence. Only five prohibitive subjects showed non-imitative aggression directed at the Bobo doll, while nine of the controls did so. The trends toward inhibition of aggression in the presence of a female experimenter in nearly all of the groups may reflect generalization of controls from both the home and the nursery school where female figures are generally responsible for

discipline and control of aggression. Male figures on the other hand may serve to activate aggression in boys because of identification with cultural stereotypes of masculinity.

The mere fact that the female experimenters were adults may account for the generalization of inhibition. It seems clear that the prohibitive instructions were very effective in suppressing imitative aggression. Less firm instructions may show less of an effect. The instructions in the present study were so strong that they seemed to suppress all aggression and easing of the prohibitions may show a differential effect and allow more non-imitative aggression to be shown. It would be expected that this non-imitative aggression would show up more in the presence of a different experimenter. Perhaps if the test for generalization were more removed both temporally and spacially, the prohibitions might not have had such a strong effect and differences would appear in the expression of imitative and non-imitative aggression.

Most explanations of imitative aggression refer to Freud's (1946) notion of "imitation with the aggressor" or Mowrer's (1950) "defensive identification." These theories assume that subjects when threatened with aggression take on the qualities of the aggressor and become agents of aggression rather than objects of aggression in order to allay their anxiety. Bandura's studies, however, indicate that his subjects imitated aggressive behaviors of models who were non-threatening and even nurturant. He prefers a learning theory orientation as underlying imitative aggression and postulates that object displacement accounts for aggression found in children of punitive parents. He found, for example, that parents of aggressively antisocial adolescents (Bandura and Walters, 1959) and of hyper-aggressive boys (Bandura, 1960) were punitive of aggression directed toward themselves while actively reinforcing aggression toward others outside the home. This differential reinforcement tends to inhibit aggression towards the original instigators while fostering displacement of aggression towards other outside

the home. Bandura (1961) claims that Miller and Dollard's (1941) demonstrations of imitative learning in which observed models were rewarded for certain acts and subjects rewarded for duplicating the behaviors of the model are actually cases of discrimination learning in which the behavior of others act as a discriminatory stimulus for responses already part of the subjects' response repertoire. He stressed that:

> An adequate theory of the mechanisms underlying imitative learning is lacking. The explanations that have been offered (Logan, Olmsted, Rosner, Schwartz, and Stevens, 1955; Maccoby, 1959) assume that the imitator performs the model's responses covertly. If it can be assumed additionally that rewards and punishments are self-administered in conjunction with the covert responses, the process of imitative learning could be accounted for in terms of the same principles that govern instrumental trial-and-error learning. In the early stages of the developmental process, however, the range of component responses in the organism's repetoire is probably increased through a process of classical conditioning (p. 580).

It is interesting to note that one child who was being told by the experimenter in the prohibitive instructions, "You wouldn't hit him with a mallet, would you?" became quite excited and exclaimed, "No! . . . I'd hit him with a hatchet!" It appears that mere observation, without apparent rewards, shaped the aggressive behaviors aroused by mild frustration. There was no opportunity for performance of the model's behavior except in the test situation and there were no external rewards. The experimenter abstained from making any evaluative comments about the model and his only verbalizations were intended to keep the subject's attention on the film.

The frustration experience in the present study seemed to provide the desired effect. Most of the children became deeply involved with the various mechanical and electrical toys that were provided in a pleasant party-like atmosphere. It was necessary to gently but firmly take some of the subjects from this room to the doll play test situation.

One of the experimental subjects who had not received prohibitive instructions told the teacher on his return to nursery school that, "There was a pounding thing in there and I punched and punched and punched until he was dead! There was a real man in there but I couldn't punch him." When asked by the teacher if he wanted to, he replied, "Yah . . . but he was too big." His displacement of aggression to the Bobo doll was obvious.

The most extreme aggressive responses occurred in the experimental group who had not received prohibitive instructions and these aggressive responses were nearly always directed at the Bobo doll. Several of the children attacked the doll violently with a wooden mallet in each hand. The following are comments made by the raters while observing non-prohibitive experimental subjects:

> "Before S picked up the mallet to hit Bobo, he looked at E and then at Bobo several times. Waited until E looked out of the window before really letting go. Child commented on his disappointment in having to leave 'the best toys' and said that he liked the big train better than the small wooden one."
>
> "Child was very aggressive verbally and physically toward Bobo. At one point he said he would 'knife' Bobo.
>
> S struck the father family doll twice and said he would beat up the E (who in this case was a female). S said the mother and father family dolls got killed and had to go to the hospital."

Occasionally subjects would shoot the dart gun at the experimenter but generally their aggression was directed toward the Bobo doll, the family dolls and one child even shot the teddy bear.

This study has several implications for further research. One area which may yield interesting findings relates to the effects of instructions when no adult figure is present. During one of the doll play sessions, the experimenter was called into the observation room to

make a minor adjustment on the interval timer. No sooner had the experimenter left the room when the subject, who had not received prohibitive instructions, exploded in a violent burst of aggression directed against the Bobo doll. Several other subjects were observed following the twenty minute test session and in some, the absence of an adult figure seemed to lessen previous inhibitions.

Another area which might be investigated is the relative effectiveness of different types of instructions on imitative aggression. For example, certain subjects might be given channeling instructions which would have as their purpose the channeling of aggression along more socially acceptable lines such as verbal aggression at the experimenter.

It would be interesting to observe these same children after a period of weeks or months to see how well prohibitive instructions hold up with the passage of time, and to observe the duration of effects of exposure to an aggressive model.

Bandura has suggested a comparative study of the imitation of aggressive models who are feared, who are liked and esteemed, or who are essentially neutral figures in order to throw light on whether or not a more parsimonious explanation other than that involved in "identification with the aggressor" can be used to explain imitative aggression. Currently, Bandura is trying to evaluate the effects when the model is rewarded, is punished, or experiences no reinforcement after an aggressive sequence. All groups of children in this research, as a final step, will be given permission to reproduce the aggressive actions of the model for an attractive reward. The expectation is that subjects who may be prohibited or otherwise inhibited from performing the behavior of the model would imitate this behavior for a reward; thus clearly demonstrating the inhibitory effects of the experimental variables.

SUMMARY

Sixty nursery school boys were randomly assigned to three conditions. Subjects in one experimental group individually observed a five-minute film sequence of an aggressive model; a second experimental group received, during the film presentation, prohibitive verbal instructions regarding specific aggressive acts which the film model directed at an inflated clown. A control group did not see the film and received no instructions of any kind. Half of the subjects in each of the groups were randomly assigned to a neutral female experimenter in a doll play test situation which followed mild frustration designed to elicit aggressive behavior. Subjects were observed in doll play for a 20-minute period during which ratings were made of their behavior at five-second intervals. Over half of the subjects were rated by two independent raters in order to determine rater reliability. Ratings were made on 27 different behaviors which were broadly classified as Imitative Aggression, Partially Imitative Aggression, Non-Imitative Aggression, Non-Aggression, and Imitative Verbal Aggression. The latter category was eliminated because of poor sound transmission and the lack of intelligibility in the speech of these subjects.

It was predicted that boys exposed to an aggressive model would, following a frustrating experience, reproduce the aggressive behaviors of the model and would differ in this respect both from boys prohibited from performing such acts and boys not exposed to the model. A second hypothesis was that boys who were verbally prohibited from performing the aggressive actions of the model would inhibit these acts in subsequent doll play. The third hypothesis concerned the generalization of effects

of exposure to an aggressive model and the generalization of prohibiting instructions. It was expected that following frustration, subjects not receiving inhibiting instructions would display more aggression in the presence of the frustrator than in the presence of a more neutral figure of a different sex. Finally, it was expected that the effects of verbal prohibition on imitating of the model's aggressive behavior would be greater in the presence of the person invoking the prohibition than in the presence of a neutral experimenter.

The responses scored involved highly specific concrete classes of behavior and yielded high inter-scorer reliabilities, the rank correlation coefficients being in the .90s.

Subjects seeing the film without instructions clearly imitated the aggressive behaviors of the model following the mild frustration experience. These differences were generally highly significant. Those subjects who were prohibited during the presentation of the film were inhibited in imitating aggressive behaviors displayed earlier by the model.

As a test of generalization of the effects of exposure to the film and as a test of the generalization of prohibitive instruction, half of the subjects in each group were exposed to a "neutral" experimenter in doll play. The highly significant differences between the experimental groups on imitative aggression remains, indicating that both effects readily generalize. Subjects who viewed the film without prohibitive instructions displayed more aggression, both imitative and non-imitative, in the presence of the experimenter who frustrated them. The difference is highly significant for non-imitative aggression, but only approaches significance for imitative aggression.

It was expected that the effects of verbal prohibitions would be greater in the presence of the person invoking the prohibition.

However, the differences here were not significant, both groups receiving prohibitive instructions showing little imitative behavior.

The results were discussed in terms of a learning theory of displacement rather than other theories utilizing such concepts as "identification with the aggressor" or "defensive identification."

REFERENCES

REFERENCES

Ackerman, N. W. The psychodynamics of family life. New York: Basic Books, Inc., 1958.

Bandura, A., and Walters, R. H. Adolescent aggression. New York: Ronald Press, 1959.

Bandura, A. Relationship of family patterns to child behavior disorders. Progress Report, 1960, Stanford University, Project No. M-1734, United States Public Health Service.

Bandura, A., and Huston, Aletha C. Identification as a process of incidental learning. J. abnorm. soc. Psychol., 1961, 63 (2), 311-318.

Bandura, A., Ross, Dorothea, and Ross, Sheila A. Transmission of aggression through imitation of aggressive models. J. abnorm. soc. Psychol., 1961, 63 (3), 575-582.

Bandura, A., Ross, Dorothea, and Ross, Sheila A. Imitation of film-mediated aggressive models. J. abnorm. soc. Psychol., 1963, 66 (1), 3-11.

Dollard, J., Doob, L. W., Miller, N. E., Mowrer, O. H., and Sears, R. R. Frustration and aggression. New Haven: Yale University Press, 1939.

Freud, Anna. The ego and the mechanisms of defense. New York: International University Press, 1946.

Freud, S. Beyond the pleasure principle. In Jones, E., (ed.), Collected Papers, Vol. 2. London: Hogarth Press and Institute of Psycho-Analysis, 1950.

Hollenberg, Eleanor, and Sperry, Margaret. Some antecedents of aggression and effects of frustration in doll play. Personality, 1951, 1, 32-43.

Klein, Melanie. The psycho-analysis of children. London: Hogarth Press and the Institute of Psycho-Analysis, 1937.

Korner, Anneliese F. Relationship between overt and covert hostility-economy and dynamics. Personality, 1951, 1, 20-31.

Logan, F., Olmsted, O. L., Rosner, B. S., Schwartz, R. S., and Stevens, C. M. Behavior theory and social science. New Haven: Yale University Press, 1955.

Maccoby, Eleanor E. Role-taking in childhood and its consequences for social learning. Child Develpm., 1959, 30, 239-252.

McNeil, E. B. Psychology and aggression. J. Conflict and Resolution. 1950, 3, 1-75.

Miller, N. E. Theory and experiment relating psycho-analytic displacement to stimulus-response generalization. J. abnorm. soc. Psychol., 1948, 43, 155-178

Mowrer, O. H. Identification: a link between learning theory and psychotherapy. In, Learning theory and personality dynamics, New York: Ronald Press, 1950, pp. 573-616.

Munroe, Ruth L. Schools of psychoanalytic thought. New York: The Dryden Press, 1955.

Mussen, P., and Rutherford, E. Effects of aggressive cartoons on children's aggressive play. J. abnorm. soc. Psychol., 1961, 62, 461-464.

Rosenblith, Judy F. Learning by imitation in kindergarten children. Child Develpm., 1959, 30, 69-80.

Schilder, P. Goals and desires of men. New York: Columbia University Press, 1949.

Sears, R. R. Relation of fantasy aggression to interpersonal aggression. Child Develpm., 1950, 21, 5-6.

Sears, R. R. A theoretical framework for personality and social behavior. Amer. Psychologist, 1951, 6, 476-483.

Sears, R. R., Maccoby, Eleanor E., and Levin, H. Patterns of child rearing. Evanston: Row, Peterson, 1957.

Sears, R. R. Relation of early socialization experiences in aggression in middle childhood. J. abnorm. soc. Psychol., 1961, 63, (3), 466-492.

APPENDICES

APPENDIX A. Raw Scores of Subjects Seeing the Film Without Prohibitive Instructions

Child	Age Months	Imitative Aggression Score	Partially Imitative Aggression Score	Total Imitative Aggression Score	Non-Imitative Aggression Score	Non-Aggression Score
			Same Experimenter in Test Situation			
CG	56	8	18	26	156	75
AQ	58	0	0	0	192	80
MC	61	18	31	49	103	96
AR	52	12	49	61	151	33
AK	47	44	32	76	106	65
AS	50	0	10	10	180	64
LB	50	12	12	24	115	91
LR	55	9	25	34	206	54
CJ	60	22	17	39	219	23
SS	58	25	48	73	130	97
		150	242	392	1558	678
Mean Age 54.7						
			Different Experimenter in Test Situation			
SE	50	3	0	3	68	169
IZ	65	14	19	33	73	150
BB	47	2	0	2	33	215
SL	63	16	22	38	95	124
CQ	66	16	9	25	50	173
IZ	43	2	7	9	27	206
JI	48	0	1	1	57	181
ZA	43	0	8	8	27	207
IS	40	0	7	7	82	166
BK	53	41	9	50	109	90
		94	82	176	621	1681
Mean Age 51.8						

APPENDIX B. Raw Scores of Subjects Seeing the Film With Prohibitive Instructions

Child	Age Months	Imitative Aggression Score	Partially Imitative Aggression Score	Total Imitative Aggression Score	Non-Imitative Aggression Score	Non-Aggression Score
			Same Experimenter in Test Situation			
QK	61	0	0	0	235	31
LQ	42	0	36	36	55	154
CC	44	0	0	0	157	111
CH	61	0	0	0	27	213
JI	41	2	0	0	180	82
LR	63	0	4	4	142	99
IL	41	0	0	0	28	227
QC	52	0	0	0	146	94
LP	60	0	0	0	7	232
CL	55	0	6	6	4	230
		2	46	48	981	1473
Mean Age 52.0						
			Different Experimenter in Test Situation			
CL	45	0	0	0	190	66
IA	44	0	19	19	196	25
FK	52	0	1	1	122	118
OA	60	0	0	0	68	172
JJ	43	0	0	0	186	71
RI	52	2	0	2	217	27
BA	49	0	0	0	95	147
BR	47	0	0	0	7	234
AZ	53	0	0	0	52	196
FL	43	0	0	0	103	143
		2	20	22	1236	1199
Mean Age 48.6						

APPENDIC C. Raw Scores of Control Group

Child	Age Months	Imitative Aggression Score	Partially Imitative Aggression Score	Total Imitative Aggression Score	Non-Imitative Aggression Score	Non-Aggression Score
			Same Experimenter in Test Situation			
VA	64	0	3	3	124	119
IV	54	1	9	10	127	116
ZV	49	5	8	13	168	60
ZJ	64	0	0	0	233	7
CZ	55	0	0	0	152	107
LL	57	0	2	2	221	48
AR	39	0	0	0	189	74
RO	61	0	26	26	155	101
DR	39	0	15	15	115	123
LR	48	0	0	0	57	188
		6	63	69	1541	943
Mean Age 53.0						
			Different Experimenter in Test Situation			
FR	48	0	53	53	35	139
RG	44	3	37	40	95	105
CO	44	0	1	1	198	63
LV	49	0	0	0	107	133
IG	55	0	0	0	132	77
CJ	36	0	9	9	30	189
JK	45	0	0	0	153	87
OJ	54	0	0	0	208	54
IF	57	5	0	5	136	97
LZ	63	0	7	7	94	141
		8	107	115	1188	1085
Mean Age 49.5						

APPENDIX D. Total Scores and Ranks on the Three Major Scoring Categories Assigned by Rater A and His Co-Rater

	Imitative Aggression				Non-Imitative Aggression				Non-Aggression			
	Rater A		Co-Rater		Rater A		Co-Rater		Rater A		Co-Rater	
Subject	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Film - No Instructions - Same Experimenter												
AQ	0		0		195	3	187	3	78	13	81	13
MC	49	2	49	2	132	6	134	6	96	11.5	95	11.5
SS	74	1	72	1	130	7	128	7	96	11.5	97	11.5
Film - No Instructions - Different Experimenter												
IZ	33	4	33	4	72	9	72	9	149	7	150	7
ZA	8	6	8	6	28	13	25	13	207	3	207	3
Film - Prohibitive Instructions - Same Experimenter												
QK	0		0		244	1	222	1	31	15	29	15
LG	35	3	36	3	56	11	43	11	155	6	151	6
CC	0		0		156	4	157	4	111	9	108	9
LP	0		0		7	14	7	14	232	1	232	1
OL	6	7	6	7	4	15	4	15	230	2	230	2
Film - Prohibitive Instructions - Different Experimenter												
AZ	0		0		51	12	52	12	196	4	196	4
Controls - Male Experimenter												
DR	15	5	15	5	114	8	115	8	122	8	123	8
LR	0		0		56	10	56	10	189	5	187	5
Controls - Female Experimenter												
IF	0		0		208	2	208	2	54	14	54	14
LZ	5	8	5	8	134	5	137	5	98	10	95	11.5

APPENDIX E. Total Scores and Ranks on the Three Major Scoring Categories Assigned by Rater B and his Co-Rater

	Imitative Aggression				Non-Imitative Aggression				Non-Aggression			
	Rater B		Co-Rater		Rater B		Co-Rater		Rater B		Co-Rater	
Subject	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Film - No Instructions - Same Experimenter												
CQ	25	2	25	2	164	5	145	5	75	10	73	10
AQ	0		0		187	3	195	3	81	9	78	9
Film - No Instructions - Different Experimenter												
BB	2	6	2	6.5	31	10	32	11	220	2	207	2
IZ	9	3	7	3.5	26	12	27	12	205	3	206	3
JT	1	7.5	1	8	56	9	56	9.5	179	4	183	4
Film - Prohibitive Instructions - Same Experimenter												
QK	0		0		224	1	244	1	29	12	31	12
LG	36	1	35	1	53	11	56	9.5	151	5	155	5
OL	6	5	6	5	4	13	4	13	230	1	230	1
Film - Prohibitive Instructions - Different Experimenter												
JJ	0		0		184	4	186	4	69	11	71	11
RI	1	7.5	2	6.5	216	2	215	2	26	13	28	13
BA	0		0		95	7	93	7.5	148	6	146	6
FL	0		0		103	6	102	6	142	7	143	7
Control - Female Experimenter												
LZ	7	4	7	3.5	94	8	93	7.5	141	8	141	8

APPENDIX F. Total Scores and Ranks on the Three Major Scoring Categories Assigned by Rater C and his Co-Rater

	Imitative Aggression				Non-Imitative Aggression				Non-Aggression			
	Rater C		Co-Rater		Rater C		Co-Rater		Rater C		Co-Rater	
Subject	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
					Film - No Instructions - Same Experimenter							
MC	49	1	49	1	102	2	101	2	95	7	96	7
CJ	35	3	39	2.5	227	1	206	1	21	8	21	8
					Film - No Instructions - Different Experimenter							
SL	36	2	39	2.5	94	3	92	3	125	6	122	6
CQ	22	4	26	4	55	6	44	6	172	4	173	4
IS	9	5	4	5	80	4	83	4	163	5	168	5
					Film - Prohibitive Instructions - Same Experimenter							
OH	0		0		26	7	27	7	212	2	212	2
					Control - Male Experimenter							
LR	0		0		56	5	56	5	187	3	189	3

APPENDIX G. Total Scores and Ranks on the Three Major Scoring Categories Assigned by Combined Raters A, B, and C and Their Co-Raters D and E

	Imitative Aggression				Non-Imitative Aggression				Non-Aggression			
	Rater		Co-Rater		Rater		Co-Rater		Rater		Co-Rater	
Subject	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Film - No Instructions - Same Experimenter												
CG	25	5	25	6	164	5	145	6	75	20	73	20
CJ	35	3	39	2.5	227	1	206	3	21	24	21	24
SS	74	1	72	1	130	8	128	8	96	19	97	18
Film - No Instructions - Different Experimenter												
IZ	33	4	32	4	72	15	73	15	149	11	150	11
BB	2	13	2	12.5	31	19	32	19	220	3	207	4.5
SL	36	2	39	2.5	94	12.5	92	13	125	15	122	16
CQ	22	6	26	5	55	17	44	18	172	9	173	9
IZ	9	8.5	7	9.5	26	21.5	27	20.5	205	6	206	6
JI	1	14.5	1	13	56	16	56	16	183	8	179	8
ZA	8	10	8	8	28	20	25	22	207	5	207	4.5
IS	9	8.5	4	11	80	14	83	14	163	10	168	10
Film - Prohibitive Instructions - Same Experimenter												
CC	0		0		156	6	157	5	111	17	108	17
OH	0		0		26	21.5	27	20.5	212	4	212	3
LP	0		0		7	23	7	23	232	2	232	2
Film - Prohibitive Instructions - Different Experimenter												
JJ	0		0		184	4	186	4	69	21	71	21
RI	1	14.5	2	12.5	216	2	217	1	26	23	28	23
BA	0		0		95	11	93	11.5	148	12	146	12
BR	0		0		7	23	6	24	233	1	234	1
AZ	0		0		51	18	50	17	196	7	196	7
FL	0		0		103	10	102	10	142	13	143	13

continued

APPENDIX G. - Continued

Subject	Imitative Aggression				Non-Imitative Aggression				Non-Aggression			
	Rater		Co-Rater		Rater		Co-Rater		Rater		Co-Rater	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
					Control - Male Experimenter							
DR	15	7	15	7	114	9	115	9	122	16	123	15
					Control - Female Experimenter							
IF	0		0		208	3	208	3	54	22	54	22
LZ	5	12	5	10	134	7	137	7	98	18	95	19
LR	7	11	7	9.5	94	12.5	93	11.5	141	14	141	14

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