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Imitative Aggression as a Function of Race of Model, Race of Target and Socioeconomic Status of Observer.

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Louisiana State University and Agricultural & Mechanical College

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SOCIOECONOMIC STATUS OF OBSERVER

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
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in

The Department of Psychology

by

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Abstract

The effects of race of model, race of target, and SES of observer upon imitative aggression for 4 and 5 year old black males were examined utilizing a 2 x 2 x 3 factorial design. The study was conducted in two parts. Experiment 1, with 12 Ss, was a pilot study to determine the feasibility and reliability of measuring the dependent variables of hammer aggression, gun aggression, verbal aggression and non-aggressive behavior. Experiment 2 had 48 Ss. In the experimental conditions, each S observed a videotape of either a black aggression toward a black Bobo doll, a black aggression toward a white Bobo doll, a white aggression toward a black Bobo doll or a white aggression toward a white Bobo doll. A 7½ minute segment of free-play behavior in a setting like that in the observed videotaped was filmed and scored for the dependent variables for both the experimental and control Ss. With an ANOVA, gun aggression was significant (P<.05) for modeling in Experiment 1. Black and white models were equally effective in eliciting imitative aggression. Modeling was also significant, (P<.001) for an ANOVA and (P<.005) for a MANOVA, in Experiment 2. A black and white model were equally effective in eliciting imitative aggression. In experiment 2, model x SES was significant (P<.05) with an ANOVA.
The study of aggressive behavior has received considerable attention from theorists in a wide range of disciplines. As a result of the variety of disciplines involved in the study of aggression, each with its own research methodology, there has been little consensus concerning the origins and characteristics of aggression.

Social learning theory, the theoretical orientation of this study, offers a viable explanation for the continuum of aggressive behavior. Aggression is viewed as being, in large part, transmitted and regulated at a social systems level. The implications for the management and control of aggression of this viewpoint are markedly different from those of the instinct and drive theories. Considerable research evidence has been accumulated concerning the role of personal characteristics of both models and observers and their effect on interpersonal aggression. Racial characteristics, however, have been essentially ignored.

There is considerable popular support for the hypothesis of racial characteristics being distinctive cue properties in the facilitation, if not the instigation, of aggressive behavior. The question of the role that racial characteristics play in the determination of aggressive behavior is particularly germane in those
situations where there has been racial mixing by legal intervention. The public school system and the armed services are primary areas of concern in regard to race relations.

Minority groups, especially blacks with their distinctive cue properties, have repeatedly been portrayed as being legitimate targets of aggression. In recent years, however, there has been a change in the way that blacks are perceived by American society and a change in the way that blacks perceive themselves. It would appear that the black community is in a transition period in terms of self-esteem. Blacks are beginning to cast off their characteristics from the past and develop a new racial pride. No longer are blacks consistently stereotyped as slow moving, compliant and smiling. Today blacks are more frequently seen and being portrayed as independent, resourceful and aggressive in meeting their needs.

The importance of racial characteristics in our society is reflected in the early age at which their differences become relevant. Clark and Clark (1939, 1958) demonstrated that for black children, basic knowledge of racial differences may begin as early as age three and reach a point of stability at age seven. Not only
is there an awareness of racial differences at this early age but in a choice situation the majority of black children preferred the white and rejected the brown doll in a doll-play situation. Horowitz (1938), Trager & Yarrow (1952), Goodman (1964), Morland (1966), Ammons (1950), Asher and Vernon (1969) have further documented white preference by children of both races. Generally, white has positive connotations in society whereas black has negative connotations. In reference to group identification and racial attitude toward self and others, Porter (1971) found that there appears to be an inverse relationship between anti-white feeling and in-group identity.

The objective of this study is to examine the variables, race of model, race of target, and socioeconomic status of the observer, and their effect upon imitative aggression in preschool males.

Aggression has been conceptualized in a bewildering number of ways. Precise definition is not only essential but also informative in that it reveals important aspects of the phenomena selected for observation and study. Therefore, the first objective of this study will be to examine various ways in which aggression has been defined and specify the definition of aggression for the purposes
of this study.

Just as there are numerous definitions as to what constitutes aggressive behavior, there are a wide variety of theories which have proposed to explain why people behave aggressively. Instinct and drive theories which attribute aggression to internal causation will be examined. As an alternative explanation, social learning theory will be reviewed with specific emphasis on Bandura's observational learning theory.

Since this study deals with imitative aggression, specific theories of imitative learning will be reviewed. Again, a broad spectrum of approaches ranging from the instinct theories of Morgan and McDougall to the social learning theory of Bandura will be examined. Within the context of social learning theory, the variables of contingent reinforcement, vicarious reinforcement and model and observer characteristics will be examined.

Definition of Aggression

Bandura (1973) enumerates five characteristics of responses which determine whether or not they will be judged to be aggressive by others. One of those characteristics is the intention of the person initiating the response. Dollard et al. (1939 defined aggression as an act "the goal-response to which is the injury of the
person toward whom it is directed" (p.9). Similarly, Berkowitz (1962) defines aggression as behavior aimed at the injury of some object. A primary objection to definitions utilizing intentionality as an essential aspect is that intentionality is not a property of behavior but an antecedent condition which frequently has to be inferred from the behavior.

Buss (1961) attempted to define aggression in such a way as to avoid the difficulties involved in including the concept of intentionality. He defined aggression as a response of the type that shares the characteristics of delivering a noxious stimulus and occurring in an interpersonal context. Buss, however, introduced the concept of intentionality in an indirect manner in his subsequent discussion of social roles. An individual who delivers a noxious stimulus in the execution of a recognized social role is not acting in an aggressive manner. This formulation is qualified, however, by the insistence that, to the extent that pain or discomfort is a source of satisfaction to the deliverer of the noxious stimulus, then, even in relation to a social role, the behavior is said to be aggressive in nature.

According to Bandura and Walters (1963) consideration of aggressive behavior must deal with how responses
usually considered aggressive are acquired and maintained and how an individual learns to discriminate an aggressive from a non-aggressive response.

For the purpose of this study, aggression will be defined as behavior that results or could result in personal injury. The social context in which the aggressive act takes place is of particular interest, since simple stimulus and response data gain predictive power with the inclusion of variables such as characteristics of the aggressor and target.

Theories of Aggression

Writing from an ethological point-of-view, Lorenz (1967) maintains that the mechanisms of instinctive patterns, of which aggression is only one, build up an excitation in the particular instinctive center in the central nervous system which is dissipated by the performance of some given action. If the pattern is not released by some appropriate situation, the "specific action potential" or "action specific energy" is dammed up in a manner analogous to hydraulics. As a result, the threshold for stimuli capable of releasing the action pattern is lowered. Or, if the amount of energy accumulated is great enough, the pattern goes off by itself in a form of autonomous or spontaneously generated behavior. Lorenz contends that
inhibition of aggression as well as the motivation toward aggression is innate throughout the phylogenetic scale. Man, however, with his unique capacity for thought and speech has stepped outside the normal range of evolution. Over a span of many generations, a process of ecological adaptation was achieved which, without the interference of man's new capacity for thought, would have taken a much greater period of time. Man, with the advent of tools and resulting technology, exceeded the innate controls over the expression of his aggression. The evolution of social instincts and social inhibitions could not keep pace with the rapid development forced on human society by the growth of traditional culture. Man, basically harmless and lacking in the natural weapons with which to kill large prey, including his fellow man, used his new tools not only to kill game but his fellow man. Man is lacking the built-in safety devices which prevent other carnivores from abusing their killing power.

Freud's (1959) conceptualization of aggressive behavior also favored an instinct based explanation. His ideas about the sources of aggression changed considerably during the course of his writings (Thompson, 1950). In his earlier writings, aggression was relegated to a relatively minor role in relation to libido and psychosexual
development. Each stage of psychosexual development was characterized by its form of aggression with a peak being reached during the anal stage. At this time sadistic urges to hurt and dominate others are notable for their frequency and intensity.

As Freud revised his theory, he explored more fully the nonlibidinal aspects of personality and placed more emphasis on ego instincts. He was then more concerned with the aim of the instinct rather than with the source. The general aim of the ego instincts was theorized to be self-preservation with the major constituent being aggression. Aggressive tendencies were seen as arising from the ego instincts rather than from the libido. The reactive nature of aggression was emphasized with the source being the self-preservation tendency of the ego. The ego reacted aggressively whenever threatened or denied satisfaction.

In his last theoretical formulation, Freud (1959) gave aggressiveness an even more important role. Basic to this revision is the assumption of the existence of two opposing instinctive forces, Eros and Thanatos. Both life, Eros, and death, Thanatos, instincts have the aim of reducing tension, the life instinct seeking release mainly from sexual tension and the death instinct seeking release from the tension of simple living.
Freud's formulation of aggression is directly related to the manner in which humans manage to live in spite of the death instinct. The life instinct can alter the death instinct in one of two ways. The libido can turn the death instinct toward the objects of the outside world and, in the process of attacking others, the individual finds relief from the pressures pushing toward death. The stronger the death instinct, the greater the necessity to direct aggression outward. Secondly, the libido can merge with the death instinct resulting in aggressive behaviors becoming a source of sexual pleasure.

Psychoanalytically oriented theorists since Freud have been divided in their reactions to the formulation of a death instinct. A relative few, like Menninger (1942) and Nunberg (1955), fully accept Freud's formulation of the death instinct. Alexander (1941) and Hartmann, Kris and Lowenstein (1949), however, reject the concept of the death instinct and instead view sexual and aggressive instincts as being the two primary driving forces in the determination of behavior.

A conceptualization of aggressive behavior which was influenced by a psychoanalytic theory is the frustration-aggression hypothesis of Dollard et al. (1939). Although drawing on Freudian theory for inspiration, the frustration-
aggression theory was dominated, methodologically, by a strong behavioristic approach which resulted in frustration and aggression being treated in a strong stimulus-response framework. The main theses are stated clearly and unequivocally: "occurrence of aggressive behavior always presupposes the existence of frustration and, contrariwise, the existence of frustration always leads to some form of aggression" (p.l). Frustration is defined as the state of the organism whenever there is interference with a goal-response. The authors made no assumption as to whether the relationship between frustration and aggression was innate or learned. Due to the observable fact that not all frustration leads to aggression, Miller (1941) reformulated the hypothesis so that the consequent of observable aggression was replaced by an instigation to aggression. This instigation to aggression could be undetectable to an observer due to its weakness or it could be nullified by other behavioral habits.

In an attempt to predict the occurrence and intensity of aggressive behavior with greater accuracy, social learning theory has established itself as a primary theoretical orientation. Rather than the global approach of the instinctive and frustration-aggression theories, social learning theory attempts to isolate the major determinants
of aggressive behavior for specific individuals and for specific situations. Social learning theorists also are less concerned with the sources of aggressive instigation than they are with the reinforcement contingencies in the environment which influence whether or not an aggressive response, once made, will be rewarded. This approach is based on the assumptions that aggression can not be studied as a single, unitary phenomenon and that the events which lead to aggressive behavior may differ widely in terms of the individuals involved, the social context of the act, and the meaning of the act for the participants and observers.

One aspect of social learning, imitative behavior, will be examined in detail in regard to its ability to influence the occurrence of aggressive behavior.

Theories of Imitation

Although there is considerable disagreement among personality theorists concerning the primary mechanisms by which identification takes place, it is generally agreed that identification refers to a process in which a person patterns his thoughts, feelings or actions after another person who serves as a model. According to Flanders (1968), an observer is said to imitate a model when observations of the behavior of the model, or of expressions attributing
certain behavior to the model, affect the observer so that the observer's subsequent behavior becomes more similar to the observed, or alleged, behavior of the model.

The concept of imitation in psychological theory has a history dating back to the formulation of Morgan (1896). He regarded imitation as an innate, instinctive process or propensity. This instinctual approach reached its peak of popularity with the theory of McDougall (1908). As the doctrine of instincts fell into disrepute, a number of psychological theories based on Pavlovian conditioning principles became popular, with Humphrey (1921) and Allport (1924) being major contributors. These conditioning theories introduced the concept that some responses are themselves stimuli for the exact same response. The concept of the reflex circle was adopted to explain behavior sequences in which the response of one person serves as a stimuli that elicits a second more or less identical response from the same or another person. The major difficulty with this concept, however, is that once a reflex circle has been started, it is difficult to explain its termination. Also, there is no adequate explanation of novel imitative responses.

Perhaps the most widely accepted and influential explanation of modeling behavior has been that of psychoanalytic theory. According to this formulation (Freud,
1923, 1925), there are two processes in the family, both of which are frustrating, which result in the child's identifying with his parents. These hypothesized processes are anaclitic and defensive identification.

Anaclitic identification (Freud, 1925) is hypothesized to occur as a result of the withdrawal of affectional gratification by a nurutrant adult to whom the child has developed an attachment. The resulting threat in the form of loss of love causes the child to "introject" the parent's behavior and characteristics. There is some evidence for this hypothesis from studies which have compared boys with non-nurturant fathers to boys with warm affectionate fathers (Mussen & Distler, 1959; Payne & Mussen, 1956; Bandura & Walters, 1959). It must be realized, however, that children with warm, affectionate parents have greater opportunity to observe and learn parental behavior and attitudes due to the fact that they have more frequent and extensive interaction. The rewarding properties of a model may be necessary but not sufficient conditions for modeling to occur (Mischel & Grusec, 1966; Bandura & Huston, 1961).

Defensive identification, on the other hand, was hypothesized to be a process which applied only to boys (Freud, 1923). Here the behavior is dependent upon the outcome of the Oedipus complex where the young boy reduces
the anxiety revolving about his incestuous wishes toward
his mother and feelings of rivalry toward the father by
emulating the characteristics of the father. By modeling
his behavior after that of the feared father, the boy
manages to avoid punishment. This hypothesis is seriously
questioned by the results of a study by Bandura, Ross, &
Ross (1963b) which found that in a three-person group
representing prototypes of the nuclear family that children
tend to identify with the sources of rewarding power rather
than with the envied competitor for the rewards.

Miller and Dollard's (1941) conceptualization of imitation
based on instrumental learning, is generally considered
to be the traditional S-R position. They stated that imitation occurs whenever there is high drive together with a
history of a particular kind of discrimination learning.
Therefore, imitative behavior is acquired on the same basis
as any other instrumentally learned response. It is distin-
guished from other learned behavior of the model and
the response which is rewarded is a response similar to that
of the response of the model. Imitative behavior acquired
on the basis of this trial-and-error procedure has been
called matched-dependent behavior. It is matched because
the behavior of the subject is similar to that of the
leader or model and it is dependent because the subject
requires the behavior of the leader to perform his response. Bandura (1968) considered this to be a form of discrimination place learning rather than imitation per se, since most forms of imitation involved response matching rather than place-learning.

Skinner's (1953) operant analysis of imitation in which reinforcement is considered a necessary condition for imitative behavior assumes that through a history of discrimination learning, a set of matching responses is established in every child. Imitation is treated as a form of stimulus matching in which a person matches the stimulus pattern resulting from his own responses to the appropriate modeling cues. This matching of stimulus patterns is accomplished through the process of differential reinforcement \((S^d R S^r)\). \(S^d\) represents the discriminative modeled stimulus, \(R\) represents an overt response and \(S^r\) designates the reinforcing stimulus. Skinner's formulation accounts satisfactorily for the control of previously learned matching responses by stimulus antecedents and immediate consequences but does not account for the process by which new matching responses are acquired by observation.

Mowrer (1960) proposed two possible explanations for imitative learning in his sensory feedback theory. The theory is based upon the emphasis of classical conditioning
of positive and negative emotions which accompany reinforcement to stimuli arising from matching responses. In the first form of imitative learning the observer is reinforced directly. A model responds and, at the same time, rewards the observer in some way. Through the repeated association of the model's behavior with rewarding experiences for the observer, the model's responses gradually take on positive value for the observer. Through the process of stimulus generalization the observer can later produce self-rewarding experiences simply by reproducing as closely as possible the model's positively valenced behavior. In the second form of imitative learning where there is no direct reinforcement to the observer, learning is assumed to occur empathetically. The model not only exhibits the response but also experiences the consequential reinforcement and it is assumed that the observer empathetically experiences the sensory equivalents of the model's behavior and also intuits the model's satisfaction or discomfort. Through the process of higher-order vicarious conditioning, the observer will be predisposed to reproduce the matching responses in order to obtain the resultant positive sensory feedback.

Gewirtz and Stingle (1968) proposed a simple instrumental learning model of imitation with imitation representing but one type of acquired stimulus control over responses
by means of extrinsic reinforcement. They trace the origin of imitative behavior to the reinforcement of infant imitative responses. Through the repeated imitation of adult behavior in a variety of circumstances and over a wide range of content, along with repeated reinforcement for imitation, a class of functionally equivalent behavior - a generalized tendency to imitate - behavior is maintained due to the fact that during the course of daily interaction, innumerable copying behaviors are intrinsically reinforced, at least on an intermittent schedule. Gewirtz and Stingle, therefore, stress the role of direct reinforcement to the observer in learning to imitate and the interaction of social conditions during early development with learning processes in the development of imitation as a specific type of social learning.

There is considerable evidence, contradictory to traditional S-R theories of imitative behavior, that imitative learning is not solely a function of the contingencies of reward and punishment. Bandura (1962), Bandura (1968), and Bandura and Walters (1963) have presented convincing evidence that imitative learning is a consequence of experiencing contiguous sensory events that vary in the extent to which they have effective impact on the observer. This position which suggests learning through imitation can best
be understood in terms of Sheffield's (1961) analysis of the process involved in learning complex perceptual-motor tasks as a result of demonstration. Sheffield's analysis requires that stimuli be presented in conjunction and that their association be registered within the memory storage of the organism.

Bandura (1963, 1968, 1973) proposes a contiguity theory of observational learning or imitation based on two representational systems - an imagined and a verbal. The acquisition of imitative learning results primarily from stimulus contiguity and associated symbolic processes. Perceptual, symbolic and sensory events possess cue properties that serve as discriminative stimuli with the observer learning to associate certain responses with observed conditions. Without necessarily ever performing the observed behavior, these cues provide the basis for imitation when the observer finds himself in a situation similar to that of the model. The performance of responses learned by means of observational learning is dependent to a great extent upon the nature of the reinforcing consequences to the observer or to the model.

Imagery formation, the first representational system, is assumed to occur through the process of sensory conditioning. During the process of observing a model's
behavior, certain perceptual responses of the observer become sequentially associated and centrally integrated. If these sequences are repeatedly observed and centrally integrated, a stimulus acquires the ability to evoke these images even though the stimulus is no longer physically present.

The second representational system in Bandura's formulation deals with the process of verbal coding of observed events. This system accounts for the major component of observational learning as well as the speed and long-term retention of observed model behavior. Bandura, Grusec, and Menlove (1966) found that children who formed verbal equivalents of model behavior were able to reproduce significantly more responses than children who had merely watched the behavior or those who had been engaged in competitive symbolization. Watching alone was also superior to the competitive symbolization condition. Similar results were also obtained by Gerst (1968) who found that retention of model responses was superior in those conditions where the observer labeled the behavior or developed some sort of imaginal code. In a test of retention, labeling was found to be superior in terms of memory.

Bandura's contiguity theory of learning assumes that a stimulus contiguity is a necessary, but not a sufficient condition for acquisition and performance of behavior.
Imitative learning is a multiprocess phenomenon which is dependent on factors regulating the sensory input of model stimuli, transformation of this into representational forms, subsequent stabilization and retrieval of these representational forms, the response capabilities of the observer and the motivation of the observer to reproduce these behaviors.

Variables Influencing Imitation Responses

**Contingent Reinforcement to the Observer**

The results concerning the effects of reward to the observer of modeled behavior which is contingent upon the observer’s imitating the model strongly supports the position that reward increases imitation. In animal research, Church (1957a, 1957b) found that rats who were directly rewarded with water for imitating the maze running behavior of another rat serving as a model, imitated significantly more than rats who were not rewarded. Darby and Riopelle (1959) found that food treats were instrumental in increasing the imitative behavior of an observer monkey for choice behavior of a monkey serving as a model.

Direct reward across a variety of tasks has also been found to increase the imitative behavior of human subjects. With children, where the presentation of reward was contingent upon the observer’s imitating the behavior of the model, a wide variety of rewards have been used. Bandura (1965) found that when children, who had previously observed a film
of aggressive adult models who were either rewarded, punished or suffered no consequences for their behavior, were offered attractive reinforcement in the form of fruit juices or toys, the differential results of observed consequences on behavior were eliminated and all children demonstrated similar learning effects. Using preschool children as subjects, McDavid (1959) utilizing a matched-dependent design, found an increase in imitation across trials when the subjects were rewarded with candy for matching the model's choice in a simple discrimination task. In a study using either matched-dependent learning or direct learning for responding to color cues, McDavid (1964) found that children learned the response equally well as a function of direct reward. Lovaas, Freitas, Nelson, and Whalen (1967) trained schizophrenic children to imitate non-verbal responses of an adult by using food as a direct reward.

A number of other studies have demonstrated that a variety of direct rewards have resulted in an increase in imitative behavior: Hicks (1965) and May (1966) using candy; Baer (1968), Baer and Sherman (1964), Kanfer and Marston (1963) using verbal reinforcement with the word "good"; Clark (1965), Lewis and Duncan (1958) and McDavid (1962) using tokens.

The above studies document the relationship between direct reward and increments in imitative behavior. Individuals directly rewarded for imitating aggressive behavior
exhibit greater imitative behavior than those punished for the same behavior. The past reinforcement history of black children would expectedly be different in reference to behavior directed toward other black children than toward white children. Black-black aggression has the possibility of being adaptive and rewarding both tangibly and in status. Black-white aggression, on the other hand, brings with it a high probability of punishment.

The differential reinforcement history of black and white children is reflected in the results of Banks and Rompf (1973) who found that both black and white children rewarded a white child more than a black child for the same level of performance. There was a marked quantitative preference for white performance even though blacks were more often qualitatively picked as the "winner" by black children.

This differential reinforcement is also reflected in Savitz's (1973) study which found that there was excessive severity in dealing with black-white offenses and systematic indifference to black-black crime. This disparity of consequences for black and white behavior is also illustrated in the data of Hackler (1970) and Hirschi (1969). They found that the official documented delinquency rate for blacks was three times that of the white rate even though the rate of admitted delinquency was approximately equal for both races.

These data verify the subjective conclusions that one
might reach concerning the differences in black and white reinforcement for the same behavior. Blacks tend to receive less positive reinforcement than whites for constructive behavior from both blacks and whites and the consequences of socially disapproved behavior, especially aggressive behavior, are much more severe for blacks than for whites.

**Vicarious Reinforcement**

The role of vicarious reinforcement is inferred on the basis of changes in the behavior of an observer as a function of witnessing a model being reinforced for performing a given behavior. An underlying assumption would seem to be that observing a model being reinforced has the same effect upon the observer as direct reinforcement to the observer.

The effect of observing response consequences to a model and subsequent acquisition and performance of modeled behavior by an observer is illustrated by a study by Bandura (1965) in which children observed a film-mediated model who exhibited a number of novel physical and verbal aggressive responses. The model subsequently either received praise, punishment or no response consequences for his aggressive behavior. A post-exposure test of spontaneous imitation revealed that children who observed the model rewarded or receive no adverse consequences for aggressive behavior exhibited a significantly greater variety of imitative responses than children who saw the model punished. Boys imitated substantially more
of the model's behavior than girls, particularly so when model aggression resulted in punishment. Following the performance test, children of all three groups were rewarded for reproducing the model's responses, resulting in the elimination of the previously observed performance differences. The sex differences in imitative aggression were also virtually eliminated.

A number of other studies have found that vicarious reinforcement increases imitation using the following as rewards: use of the word "good" by the experimenter (Kanfer and Marston, 1963; Marston, 1966; Marston and Kanfer, 1963), use of the word "good" by the model (Marlowe, Breecher, Cook and Dobb, 1964; Marston, 1965), tokens (Clark, 1965; McDavid, 1962), praise plus fruit and candy (Bandura, 1965).

Even though a particular black child has never experienced negative consequences as a result of aggressive behavior in the presence of a white, there are abundant examples in everyday life and in the media which depict the usual negative consequences of such behavior. Utilizing the observational learning paradigm, Liebert, Sobol, and Copemann (1972) investigated the effects of both vicarious positive and negative consequences and race of model upon preschool black males' imitation and recall for a commodity preference task. Vicarious positive consequences resulted in significantly more imitative behavior and recall than no praise. Vicarious
negative consequences resulted in significantly fewer imitative responses but had no effect on recall. Using imitative aggressive behavior, Thelen (1971) found that praise to the model had no effect on the motor, aggressive behavior of young black males. Praise to the model did result in less recall of the task than the no-praise condition.

Although there are negative sanctions associated with aggressive behavior directed toward whites, there is strong cultural pressure for blacks to imitate the behavior of whites in general. This is particularly true in the public school system where black subcultural behavior is seen as disruptive at best and often times as pathological. Baratz and Baratz (1970) concluded that even social scientists designing and directing preschool intervention programs often perceive behavior characteristics of blacks as "pathological."

**Model Characteristics**

The degree of imitative behavior is dependent upon variables other than the direct or vicarious reinforcement contingencies of a particular behavioral sequence. Distinctive model characteristics have been found to serve as discriminative cues. One variable which has been found to be particularly influential upon imitative behavior has been model competence (Rosenbaum & Tucker, 1962). Subjects asked to predict outcomes of an imaginary event imitated successful model behavior earlier and more frequently than non-successful
model behavior. Greater imitation of highly competent models has also been found by Gelfand (1962) and Mausner and Block (1957).

The theoretical formulations of Bandura and Walters (1963), Miller and Dollard (1941), and Mowrer (1960) predict that resource control on the part of the model increases imitative behavior on the part of the observer. Bandura, Ross and Ross (1963b), using a three-person group representative of the nuclear family, found that children imitated the model possessing rewarding powers more frequently. Similar findings have been obtained by Hetherington and Frankie (1967), Grusec (1966), Grusec and Mischel (1966), and Mischel and Liebert (1967). Mischel and Liebert also found that removal of the model's future control of resources reduced the degree of imitation on the part of the observer.

The effect of model characteristics is also dependent upon the characteristics of the recipients or target of the model's aggressive responses. Epstein (1966) found that white college students displayed more imitative aggression, in the form of shock delivered for error in a learning experiment, toward a black after they had observed an aggressive black model. Epstein (1965, 1966) found a relationship for aggressive behavior between authoritarianism, as measured by the F-scale, and socio-economic status. High authoritarian individuals expressed more aggression toward low status targets.
relative to high status targets. High status individuals were the major targets of low authoritarian individuals. Berkowitz (1965) and Green and Berkowitz (1967) found that angered or frustrated subjects were significantly more aggressive toward individuals whom aggressive characteristics had been previously associated.

The degree of realism of the model does not appear to influence the tendency of the observer to imitate modeled behavior. Bandura, Ross, and Ross (1963a) found no difference between observer imitation of aggressive behavior for live, filmed, or cartoon models. Similar results have been obtained by Hill and Liebert (1967) and Hanratty, Liebert, Morris, and Frenandez (1967). Hanratty et al., however, did find that children exhibit much less imitative aggression toward a live target than toward an inanimate target. This was true regardless of whether the aggression was directly physical or verbal in nature.

The perceived characteristics of the model in imitative behavior has a significant effect upon behavior secondary only to expected consequences. It has been well documented that racial characteristics are important determining factors in self-esteem and in racial preference (Clark & Clark, 1939, 1958; Horowitz, 1958; Trager and Yarrow, 1952; Goodman, 1964; Morland, 1966; Ammons, 1950; Asher & Allen, 1969).
Even before they have a sophisticated knowledge of racial categories, children of both races have a positive evaluation of white and a negative feeling about black. Porter (1971) found this to be true and in addition, there was a significant interaction between socio-economic status and race. While working class black children exhibited greater preference for brown dolls, middle class black children showed a particularly high rate of rejection of their own group and a higher preference for white dolls.

These findings are of particular interest in comparison to those of Bandura (1963) when examined in reference to behavior related to the sources of resource control. Porter's findings are seemingly in contradiction to those of Bandura. Middle class children have greater opportunity to observe blacks who possess resource control and would, therefore, be expected to imitate a black model more frequently than lower class black children. However, preference for and imitation of, are not seemingly equivalent tasks or behaviors. Another consideration is the magnitude of the perceived control of resources. Even though middle class blacks possess greater resource control than lower class blacks, that control may be insignificant in comparison to the resource control of white models.

In studies dealing directly with racial or socio-ethnic
factors and imitative behavior, there have been contradictory results dependent upon a number of factors such as the socio-economic status of the subjects, sex of the model, the task involved, and whether the model was praised or punished. Portuges and Feshback (1972) found that disadvantaged black males did not imitate either a positive or a negative female white model in a school setting. Thelen (1973) found no differential modeling as a function of subject's race or the model's race on either a cognitive or motor task. Breyer and May (1970) using a matching task and verbal behavior, found no significant relationship between race of model and imitative behavior for preschool black male and female subjects. Thelen (1971) investigated the effect of subject's race, model's race, and vicarious praise on imitative behavior. Kindergarten and first-grade black and white children observed a black and a white model who was either praised or not praised for performing specific aggressive behavior. White subjects imitated the black model more than the white model but black subjects imitated the black and white models with equal frequency. Liebert, Sobol, and Copemann (1972) found that first-and second-grade black boys were more likely to match the responses of a white model than a black model for a commodity preference task.
Observer Characteristics

A number of studies have been reported which indicate that both the social history of an individual as well as specific stated characteristics have a decided influence on the rate of imitative behavior. Feagen (1968), in a study of violence in New York's Bedford Stuyvesant ghetto, found that young, low income Negro males were more aggression oriented than females, older males and higher socio-economic status individuals. McKee and Leader (1955) found that low socio-economic children exhibited greater competitiveness and aggressiveness than high socio-economic children. These behaviors were observed and rated at Day Care Centers for preschool children. In another study in a natural setting, Yarrow (1958) found that low income blacks of all ages aggressed more against each other than toward whites. Porter (1971) found that preference for either a white or a brown doll among black children seems to be subculturally patterned. Children of working class parents exhibit a greater preference for brown dolls than their middle-class peers. Middle-class blacks show a particularly high rate of rejection of their own group and preference for white dolls. Banks and Rompf (1973) found that middle-class black and white children rewarded the success of a white player more than a black player on a
performance task even though their performance was essentially equal. The black players were, however, more frequently selected as the game "winner" by the black children.

Baron (1966) found that an individual's past history of social reinforcement was an important influence on present receptivity to social reinforcement. Affective and behavioral reactions to present social reinforcement are assumed to be a complex function of both the direction and magnitude of any disparity between expected and perceived rewards. When such a disparity does exist, the individual changes his present performance in such a manner as to return to the expected level of reward or a level moderately exceeding that level.

Frustrated or angered individuals have been found to imitate the behavior of an aggressive model more readily in the studies of Bandura et al. (1961), Bandura et al. (1963a), Berkowitz (1965), Berkowitz and Green (1966), Green and Berkowitz (1967), and Hartman (1966). Even though frustrating or angering an individual does facilitate imitation of aggression, it does not appear to be necessary. Hanratty et al. (1969), using a procedure similar to that of Bandura et al. (1961, 1963), found that imitation of aggressive behavior occurred in the absence of the usual frustration, manipulation or provocation.
Hypotheses

The influence of racial characteristics on imitation is as yet a relatively unexplored area. A small number of studies have been reported which have manipulated race of model, race of subject or both. Due to the variety of condition, tasks, and subject-model manipulations, there have not emerged any generalizations as to the influence of race on imitation. The influence of socio-economic status and racial characteristics has received even less attention. The purpose of this study is to examine the relationship of race of target, race of model, and socio-economic status of the observer to the acquisition of aggressive behavior via observational learning.

There is a large body of research evidence (Bandura, 1968; Flanders, 1968) demonstrating that both children and adults acquire attitudes, emotional responses, and complex patterns of behavior through exposure to pictorially presented models. Therefore, it is hypothesized that those subjects who have observed a modeling film with an adult male aggressing toward a Bobo doll will exhibit more aggressive behavior than subjects in the non-model groups.

A second hypothesis is that low socio-economic subjects will exhibit more imitative aggression than high socio-economic status subjects. Low socio-economic status
children have been found to exhibit more aggressive and competitive behavior than high socio-economic status children (Ausubel, 1958; McKee & Leader, 1955). When considering socio-economic status, the fact that the highest rates of aggressive behavior are found in environments where aggressive models abound and where aggressiveness is regarded as a highly valued attribute would support the hypothesis that low socio-economic status subjects will be more aggressive. Supporting this is the fact that low status children usually are deficient in verbal skills which would allow them to handle potentially aggressive producing situations in a non-aggressive fashion.

A third hypothesis being considered is that low socio-economic subjects will imitate the behavior of a black model more than the behavior of a white model. Aronfreed (1968) hypothesized that the affective response of an observer can parallel the affective state of a model only to the extent that their past experiences share common elements. This has been supported by Rosenkrans (1967) who found that both the frequency of imitation and the size of the behavior repertoire were greater when the observer perceived himself as similar in interest, skills, background, and group membership. Following the data of Clark and Clark (1939, 1958) and Porter (1971) that low socio-
economic status blacks choose black dolls more often than white dolls, it would appear that there is greater identification among low socio-economic blacks with blacks and therefore a higher probability of imitative behavior. Also, Porter found that middle-class black children exhibited a preference for white dolls over black dolls. Banks and Rompf (1973) found that middle-class black children showed a quantitative preference for white players using a performance task. These results lead to the fourth hypothesis that high socio-economic status children will imitate the behavior of a white model more than the behavior of a black model. This hypothesis is also consistent with the findings of Bandura, Ross, and Ross (1963b) which found that children imitate the model possessing rewarding powers more frequently than a rival or an ignored model.

The fifth hypothesis is that both high and low socio-economic status subjects will aggress more toward a black model than toward a white model. Bandura (1965) found that children who observed a model exhibiting novel verbal and physical aggressive responses and subsequently receiving either praise or no response consequences, imitated this behavior significantly more than children who had seen aggressive behavior punished. It would be expected that black children would show less aggressive behavior toward
a white target due to the social sanctions against blacks aggressing toward whites. Yarrow (1958) found this to be true in a field-study of pre-adolescent blacks and whites at a summer camp. Blacks and whites directed their aggression toward blacks twice as frequently as toward whites. Not directly addressing the racial issue but dealing with stereotyping, Green and Berkowitz (1966) found that individuals identified with a "victim" stereotype were more frequently aggressed against than individuals associated with a "victor" role. There is little doubt that the black has generally been associated with the "victim" role and the white has been associated with the "victor" role.

Hypotheses six and seven are based upon the observation that low SES subjects typically exhibit fewer imitative verbal responses than high SES subjects (Breyer & May, 1970). It is hypothesized that subjects who possess or utilize fewer verbal skills will engage in more physical aggression.

In summary, the following relationships are hypothesized:

1. Subjects who have observed a modeling film with an adult male aggressing toward a Bobo doll will exhibit more aggressive behavior than the subjects in the non-
model group.

2. Low SES subjects will exhibit more imitative aggression than high SES subjects.

3. Low SES subjects will imitate the behavior of a black model more than the behavior of a white model.

4. High SES subjects will imitate the behavior of a white model more than the behavior of a black model.

5. Both low and high SES subjects will aggress more toward a black target than toward a white target.

6. Low SES subjects will exhibit greater mallet aggression than high SES subjects.

7. High SES subjects will exhibit greater verbal aggression than low SES subjects.

Method

This study was conducted in two phases, Experiment 1 and Experiment 2. The purpose of Experiment 1 was to establish the feasibility and reliability of the rating of the dependent variables. As a pilot study, Experiment 1 also established base-line information concerning the
relative frequency of responses for each dependent variable category. Since the procedure and dependent measures were identical for Experiment 1 and Experiment 2, these sections are combined.

**Subjects and experimenter.** In Experiment 1 the subjects were 12 four and five year old black males from kindergarten and Day Care Centers in the Little Rock, Arkansas area. The subjects in Experiment 2 were drawn from the same population as Experiment 1 with the total sample size being 48. In both experiments, subjects were selected randomly and assigned to one of eight experimental conditions. Determination of socio-economic status was based on the McGuire-White Scale (1955). An adult, white male served as experimenter in all conditions.

**Modeling film.** A two and one-half minute videotape depicting either a black or white adult male exhibiting aggression toward either a black or white appearing Bobo doll was shown to each subject in the modeling condition. The film was divided into five thirty-second periods. In the first period, the Bobo doll was shown alone in the center of the room. A plastic mallet and a toy gun were visible on the floor near the Bobo doll. During the second period, the model came into the room, walked around the Bobo doll, shook his fist and repeated the following:
So there you are! Boy, am I going to get you. I'm going to shoot you and hit you. I'm going to shoot you and shoot you and shoot you! Bang! Bang! Bang! I'm going to get the hammer and hit you and hit you and hit you. You just wait and see. I'm going to get you! I'm going to get you right now. I'm going to get you with the gun and I'm going to get you with the hammer. I'm going to get you right now! Yes, I am!

At the end of this sequence, the model picked up the toy gun and began to shoot at the Bobo doll for thirty seconds. Next, he picked up the mallet and repeatedly struck the clown for the entire fourth period. The model then left the room and the Bobo doll was again shown standing alone for thirty seconds and the film ended.

Procedure. The socio-economic status of each subject was determined by use of the McGuire-White Scale (1955). The subjects in both the upper and lower socio-economic status categories were randomly assigned in equal numbers to one of four groups. They viewed either a black aggressing
toward a white target, a black aggressing toward a black
target, a white aggressing toward a black target, or a
white aggressing toward a white target.

Each of the subjects in the modeling group was told
that the experimenter had a film he wanted him to see. The
subject then viewed one of the four modeling films by means
of a television monitor. After the film was over, the
experimenter explained that he had some work to do and that
the subject would be taken back to his classroom after the
work was completed. The experimenter then seated himself
at a table in the far corner of the room with his back to
the subject. All attempts on the part of the subject to
interact with the experimenter were discouraged by stating
that he was very busy and could not talk until the work was
completed. At the other end of the room there was a Bobo
doll of the same race as the observed target in the modeling
film. The mallet and toy gun were exactly in the same
position relative to the doll as in the videotape presenta-
tion viewed by the subject.

The high and low socio-economic status subjects in
the non-modeling group were randomly assigned to either a
black or a white Bobo doll group. They were immediately
taken to a room with the appropriate Bobo doll, gun, and
mallet placed as in the modeling conditions. The exper-
imenter stated that he had some work to do and would like the subject to wait for him until he finished. All subjects were allowed to interact with the Bobo doll for seven and one-half minutes. At the end of that time, the experimenter stopped work, talked with the subject for a brief period of time and returned him to the classroom.

**Dependent measures.** The behavior of each subject was videotaped by means of a Sony AV 3400 portopack unit placed at the opposite end of the room from the Bobo doll. A seven and one-half minute sample of behavior was scored by two observers, one of whom was blind as to experimental condition.

In the recording of imitative aggression, a frequency count was used for the following categories. Mallet aggression consisted of the total number of times that the subject struck the Bobo doll with the mallet. The force with which the doll was struck was not considered. For the gun category, the number of times that the subject pulled the trigger of the toy gun resulting in an audible click was totaled. Pointing the gun in the direction of the doll was not scored unless the trigger was pulled. Verbal aggression was scored according to the total number of verbal responses which matched the verbalization of the model in the videotape. A list of scorable responses is found in Appendix 1.
The last category, non-aggressive behavior toward the Bobo doll, consisted of the cumulative total of the responses similar to those found in Appendix 2.

Results

Experiment 1.

A check of the reliability of the experimenter's scoring of the four response categories (hammer aggression, gun aggression, verbal aggression and non-aggression) was made. The percentage of agreement between the experimenter's scoring and the independent records of a second observer blind as to experimental condition exceeded 98%.

Since only a limited number of subjects made verbal and non-aggressive responses, an analysis of variance was not computed for these dependent variables. The frequency of verbal and non-aggressive responses can be seen in Tables 1-2.

An analysis of variance was computed for gun, hammer, and total aggression using pooled interaction sum of squares and degrees of freedom (Tables 3-5). Only the modeling category for hammer aggression was significant \((F=4.87, p<.05)\). A black and white model were equally effective in eliciting imitative behavior.

Experiment 2.

Both an analysis of variance and a multivariant
analysis of variance were computed using the Statistical Analysis System program at the Louisiana State University Computer Center. For the analysis of variance, only the modeling condition was significant (Tables 6-7). Subjects exhibited significantly more aggressive behavior for both hammer aggression (F=8.87, p<.001) and gun aggression (F=8.72, p<.001) when a model was present than when there was no model. A black and a white model were equally effective in eliciting imitative behavior. Non-significant results for verbal aggression, total aggression and non-aggressive behavior are found in Tables 8-10.

For the gun aggression category (Table 7) the race of model x SES interaction was significant (F=3.2, p<.05). Although low SES balcks imitated a black and a white model with equal frequency, low income balcks imitated a white model significantly more (t=2.16, p<.05) than did high SES balcks.

**Multivariate Analysis of Variance**

As with the univariate analysis of variance, the only main effect found to be significant was race of model (F=3.96, p<.005). The analysis was computed using Hotelling-Lawley's Trace (Table 11). Figure 1 shows the distribution of mean scores for modeling conditions, indicating that black and white models are equally effective in
Table 1
Frequency of Verbal Aggressive
Responses for Experimental
Conditions in Experiment 1

<table>
<thead>
<tr>
<th>Race of Target</th>
<th>Race of Model</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>High SES</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Black</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low SES</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Black</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>White</td>
<td>9</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
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Table 2
Frequency of Non-Aggressive Responses for Experimental Conditions in Experiment 1

<table>
<thead>
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<th>Race of Model</th>
<th>High SES</th>
<th>Low SES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>Black</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>White</td>
<td>0</td>
<td>1</td>
<td>0</td>
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Table 3
Analysis of Variance for Hammer Aggression for Experiment 1

<table>
<thead>
<tr>
<th>Source</th>
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<th>df</th>
<th>MS</th>
<th>F</th>
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<td>19,914.33</td>
<td>4.89*</td>
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<td>Target</td>
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<td>2.64</td>
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<td>6,440.00</td>
<td>1.57</td>
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<tr>
<td>Error</td>
<td>35,078.00</td>
<td>7</td>
<td>4,091.10</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05
Table 4

Analysis of Variance for Gun Aggression for Experiment 1

<table>
<thead>
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<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
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<tbody>
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<td>Model</td>
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<td>3,984.25</td>
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<td>40.33</td>
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<td>Error</td>
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<td>3,023.69</td>
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Table 5
Analysis of Variance for Total Aggression for Experiment 1

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<td>7,203.00</td>
<td>.00</td>
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<tr>
<td>SES</td>
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<td>1</td>
<td>5,547.00</td>
<td>.00</td>
</tr>
<tr>
<td>Error</td>
<td>17,496.42</td>
<td>7</td>
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Table 6
Analysis of Variance for Hammer
Aggression for Experiment 2

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<th>df</th>
<th>MS</th>
<th>F</th>
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<tbody>
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<td>23,571.27</td>
<td>8.87*</td>
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<td>Target</td>
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<td>8,190.19</td>
<td>3.08</td>
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<td>SES</td>
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<td>46.31</td>
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<td>Target x</td>
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<td>4,721.65</td>
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<td>Target x</td>
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<td>188.02</td>
<td>0.07</td>
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<tr>
<td>Model x</td>
<td>5,392.04</td>
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<tr>
<td>Target x</td>
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<td></td>
</tr>
<tr>
<td>SES</td>
<td></td>
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<tr>
<td>Error</td>
<td>95,678.75</td>
<td>36</td>
<td>2,657.74</td>
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*p < .001
Table 7
Analysis of Variance for Gun Aggression for Experiment 2

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<td>8,310.02</td>
<td>8.72*</td>
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<td>Target</td>
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<td>1,219.02</td>
<td>1.27</td>
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<td>SES</td>
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<td>682.52</td>
<td>0.72</td>
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<td>Model x Target</td>
<td>791.79</td>
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<td>0.42</td>
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<td>Target x SES</td>
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<td>2</td>
<td>3,048.27</td>
<td>3.20**</td>
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<td>Target x SES</td>
<td>77.52</td>
<td>1</td>
<td>77.52</td>
<td>0.08</td>
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<tr>
<td>Model x Target x SES</td>
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<td>161.89</td>
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<td>Error</td>
<td>34,292.25</td>
<td>36</td>
<td>925.56</td>
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* p<.001
**p<.05
Table 8
Analysis of Variance for Verbal Aggression for Experiment 2

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
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<td>Model</td>
<td>234.50</td>
<td>2</td>
<td>117.25</td>
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<tr>
<td>Target</td>
<td>108.00</td>
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<td>108.00</td>
<td>2.05</td>
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<tr>
<td>SES</td>
<td>27.00</td>
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<td>27.00</td>
<td>0.57</td>
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<tr>
<td>Model x</td>
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<td>108.00</td>
<td>2.05</td>
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<tr>
<td>Target x</td>
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<td>27.00</td>
<td>0.51</td>
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<tr>
<td>SES</td>
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<tr>
<td>Target x SES</td>
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<tr>
<td>Model x SES</td>
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<tr>
<td>Error</td>
<td>1,893.50</td>
<td>36</td>
<td>52.60</td>
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Table 9
Analysis of Variance for Non-aggression for Experiment 2

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<td>Target</td>
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<td>SES</td>
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<td>25.52</td>
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<td>Model x</td>
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<td>Target</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Model x</td>
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<td>2</td>
<td>8.09</td>
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<td>SES</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Target</td>
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<td>42.19</td>
<td>0.53</td>
</tr>
<tr>
<td>SES</td>
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<td></td>
<td></td>
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<tr>
<td>Model x</td>
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<td>2</td>
<td>175.75</td>
<td>2.22</td>
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<td>Target</td>
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<tr>
<td>x SES</td>
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<tr>
<td>Error</td>
<td>2,850.00</td>
<td>36</td>
<td>79.19</td>
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Table 10
Analysis of Variance for Total Aggression for Experiment 2

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<th>MS</th>
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<td>Target</td>
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<tr>
<td>SES</td>
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<td>1,180.08</td>
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<tr>
<td>Model x Target</td>
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<tr>
<td>Model x SES</td>
<td>892.04</td>
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<td>446.02</td>
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<tr>
<td>Target x SES</td>
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<td>80.08</td>
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<tr>
<td>Model x Target x SES</td>
<td>6,021.79</td>
<td>2</td>
<td>3,010.89</td>
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<tr>
<td>Error</td>
<td>132,042.50</td>
<td>36</td>
<td>3,667.85</td>
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*p<.001
Table 11
Hotelling-Lawley's Trace for a MANOVA
of Experiment 2

<table>
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<th>df</th>
<th>F</th>
<th>Probability</th>
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<tr>
<td>Model</td>
<td>1.2787</td>
<td>10/62</td>
<td>3.96</td>
<td>0.0005</td>
</tr>
<tr>
<td>Target</td>
<td>0.2946</td>
<td>5/32</td>
<td>1.89</td>
<td>0.12</td>
</tr>
<tr>
<td>SES</td>
<td>0.1067</td>
<td>5/32</td>
<td>0.68</td>
<td>0.64</td>
</tr>
<tr>
<td>Model x</td>
<td>0.2398</td>
<td>10/62</td>
<td>0.74</td>
<td>0.68</td>
</tr>
<tr>
<td>Target x</td>
<td>0.3351</td>
<td>10/62</td>
<td>1.04</td>
<td>0.42</td>
</tr>
<tr>
<td>SES</td>
<td>0.0650</td>
<td>5/32</td>
<td>0.42</td>
<td>0.83</td>
</tr>
<tr>
<td>Target x x SES</td>
<td>0.3368</td>
<td>10/62</td>
<td>1.04</td>
<td>0.42</td>
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</table>
eliciting imitative behavior.

Since there was a significant difference between modeling and non-modeling conditions and the dependent variables were not highly correlated (Table 12), a discriminant analysis was computed. The discriminant function (Table 13) for race of model, \( M = 0.66x_1 + 0.66x_2 + 0.22x_3 - 0.22x_4 \), indicates that differences between modeling and non-modeling conditions is due to \( x_1 \), hammer aggression, and \( x_2 \) gun aggression. The subjects shown a modeling film exhibited significantly more hammer and gun aggression than the non-model control group. There was no significant difference for verbal and non-aggressive behavior. Table 11 shows the values for the non-significant results for race of target, SES, and their interactions.

Discussion

As an overview the following hypotheses were either confirmed or not confirmed.

1. Confirmed. Subjects who have observed a modeling film with an adult male aggressing toward a Bobo doll will exhibit more aggressive behavior than the subjects in the non-model group.

2. Not confirmed. Low SES subjects will exhibit more imitative aggression than high SES
Figure 1. Means for Model Conditions for Canonical Variables

Canonical Variable One

Canonical Variable Two

X_1  Black Model
X_2  White Model
X_3  No Model
### Table 12

Partial Correlation Coefficients from Adjusted Y'Y / Probability R

<table>
<thead>
<tr>
<th></th>
<th>Hammer</th>
<th>Gun</th>
<th>Verbal</th>
<th>Nonaggression</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hammer</strong></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gun</strong></td>
<td>0.028</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.87</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Verbal</strong></td>
<td>-0.189</td>
<td>0.109</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.26</td>
<td>0.52</td>
<td>0.00</td>
<td></td>
<td></td>
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<tr>
<td><strong>Nonaggression</strong></td>
<td>0.129</td>
<td>-0.057</td>
<td>-0.021</td>
<td>1.000</td>
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<tr>
<td></td>
<td>0.45</td>
<td>0.74</td>
<td>0.90</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>0.845</td>
<td>0.544</td>
<td>0.014</td>
<td>0.074</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.93</td>
<td>0.66</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Table 13
Correlation Coefficients Between Each Canonical Variable and the Dependent Variables

<table>
<thead>
<tr>
<th>Canonical Variable</th>
<th>Hammer</th>
<th>Gun</th>
<th>Verbal</th>
<th>Nonaggression</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable 1</td>
<td>0.6596</td>
<td>0.6579</td>
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<td>0.9252</td>
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<td>Variable 2</td>
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<td>-0.1680</td>
<td>0.6376</td>
<td>-0.3525</td>
<td>-0.2313</td>
</tr>
</tbody>
</table>
subjects.

3. Not confirmed. Low SES subjects will imitate the behavior of a black model more than the behavior of a white model.

4. Not Confirmed. High SES subjects will imitate the behavior of a white model more than the behavior of a black model.

5. Not confirmed. Both low and high SES subjects will aggress more toward a black target than toward a white target.

6. Not confirmed. Low SES subjects will exhibit greater mallet aggression than high SES subjects.

7. Not confirmed. High SES subjects will exhibit greater verbal aggression than low SES subjects.

The results of the present study once again confirm the potency of observational learning in the shaping of behavioral components of an individual's repertoire of available responses. Modeling effect was found to be significant in both Experiment 1 and Experiment 2. With a univariate analysis of variance, hammer aggression ($F=4.87$, $p<.05$) was significant in Experiment 1 and hammer aggression ($F=8.87$, $p<.001$) and gun aggression ($F=17.25$, $p<.0001$) were signifi-
cant in Experiment 2. With a multivariate analysis of variance, model effect was also significant ($F=3.96$, $p<.0005$) in Experiment 2. Black and white models were equally effective in both Experiment 1 and Experiment 2 in eliciting imitative behavior.

In analysing the data for socio-economic status, only race of model x SES for gun aggression was found to be significant ($F=3.20$, $p<.05$) in Experiment 2. Since there is no trend in the data, interpretation of this single significant finding would be difficult to justify.

One obvious explanation for the lack of predicted findings would be the absence of awareness of racial differences on the part of the four and five year old subjects. This is unlikely, however, since convincing evidence that racial awareness is present as early as the age of three has been presented by Clark and Clark (1939, 1958) and Porter (1971). Indirect evidence of the awareness of racial differences can be seen in the results of Stabler, Johnson, Berke, and Baker (1969) who found that the racial attitudes of society in general had been incorporated by preschool children of both races.

A small number of studies have been reported in which racial characteristics have been systematically examined for a variety of tasks with young children. Thelen and
Soltz (1969) found that white kindergarten children imitated the aggressive behavior of a white model who was verbally praised more than a predominately black group of children from a Head Start program. Thelen (1971) found no main effect differences for race of model or race of subject with kindergarten and first-grade children who observed a model perform aggressive behavior for which he was either praised or not praised. Using a verbal and a motor task, Breyer and May (1970) found no race of model or race of subject effect for Head Start children. White children did imitate more verbal behavior than black children and black children imitated more motor behavior than white children. Using a design in which a black and a white model were juxtaposed so that imitation of one model precluded the imitation of the other, Thelen, Roberts, Coverdell (1973) found no differential modeling as a function of subject's race or model's race for a cognitive and a motor task. Liebert, Sobol, and Copemann (1972) found a significant main effect for race of model on a commodity preference task using first-and second-grade black children as subjects. Black children were more likely to imitate the preference of a white model than they were the preference of a black model.
It would appear, based upon the reported evidence, that the model characteristic of race is not a primary factor in determining the degree of imitative behavior. The type of task involved in conjunction with the race of the model appears to result in differential rates of imitation. For aggressive behavior, using the imitation paradigm, the reported research has consistently failed to find a differential rate of imitation for black children in conjunction with model's race. This lack of differential imitation is consistent with the findings of this study. However, when the modeled behavior was a commodity preference task (Liebert, Sobol, and Copemamm, 1972), black children imitated a white model more than a black model. Thelen and Tryrear (1971) found that both black and white children imitated the liberal self-reward standards of a white model more than those of a black model. These findings are consistent with the more generalized findings of Bandura (1963b) that children imitate a model perceived as being in control of resources more than a model lacking in resource control. The lack of differential imitation with aggressive behavior may be due to a generalized expectancy of negative consequences on the part of black children for exhibiting aggressive behavior in the presence of white adults.
To the writer's knowledge, the effect of socio-economic status on imitative behavior has not been reported in the literature. There is inferential evidence for differential behavior, including aggressiveness, between high and low socio-economic groups (McKee & Leader, 1955; Porter, 1971). Porter's study investigated the relationship between socio-economic status and preference behavior. The difference between these two experimental tasks is obvious. The relationship between preference behavior and imitation, to the writer's knowledge, is unknown and further experimental investigation in this area is needed. The discrepancy between task and performance is illustrated by the findings of Banks and Rompf (1973). They found that white players were rewarded more than black players even though their performance on a motor task was approximately equal. However, when the same black children were asked to select the game winner, there was a marked preference for the black player. Although socio-economic status is an important variable in preference behavior, the overt aggressive behavior required with the imitation paradigm seems to be an overriding influence.

In addition to the type of task involved, an extremely important variable in inter-racial studies, which has not been examined utilizing the imitation paradigm, is the race of the experimenter. Assuming that imitating an aggressive
model in the presence of a white experimenter involves disinhibition of a negatively sanctioned response for blacks, the possible effect upon behavior becomes apparent. Bandura (1973) states that the two most potent variables effecting imitative behavior are expected consequences and model characteristics. However, the presence of a white experimenter introduces a possible source of confounding of experimental effect. Katz, Roberts, and Robinson (1965) found that black subjects performed better with a white examiner when the task was non-stressful. When the task was described as an IQ test, which was presumably more stress inducing, the black subjects performed better with a black examiner. Utilizing a cooperation task consisting of oddity discrimination problems, Katz and Cohen (1962) found that the decision of the white partner prevailed in all conditions despite the fact that the black subjects had feedback concerning the correct answers. The passivity of the black subjects was interpreted as reflecting the fear of instigating hostility in the white partner. The imitation of a white model on the part of black children on a commodity preference task, is consistent with Katz's findings for non-threatening tasks. The lack of differential imitation for aggressive behavior, which would presumably be more threatening, is also consistent with the assumption that the race of the examiner is an
important variable to be considered in imitative studies varying racial characteristics of both models and subjects.

In addition to the possible effects of race of examiner and type of task, the failure to find a difference in verbal imitative behavior raises the question of the adequacy of the imitation paradigm to investigate verbal behavior with this subject population. The consistently low and in many cases zero (10) numbers of imitative verbal responses in this study is consistent with the findings of Breyer and May (1970).

A number of areas for future research are suggested. The relationship between imitative behavior and preference behavior is one possibility for investigation. The relationship between race of the model and experimenter and the type of task involved also needs to be investigated.
References

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Ammons, R.B. Reactions in a projective doll play interview of white males two to six years old to differences in skin color and facial features. Journal of Genetic Psychology, 1950, 76, 323-341.


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Appendix 1.

Verbal Responses of Observers Scored as Imitation of Model Behavior

So there you are. There you are.
Boy, I'm going to get you. I'm going to get you.
I'm going to shoot you and hit you.
I'm going to shoot you and shoot you and shoot you.
Bang!
I'm going to get the hammer and hit you and hit you and hit you. I'm going to get the hammer.
I'm going to hit you.
I'm going to get you right now.
I'm going to get you with the gun and I'm going to get you with the hammer.
I'm going to get you with the hammer.
Appendix 2.
Non-aggressive Behavior

1. Arms around the doll - hugging.
2. Squeezing doll's nose with hand.
3. Sitting on doll.
4. Lying on doll.
5. Picking doll up without any attempt to throw.
6. Touching doll and moving hands over doll in exploratory manner.
Vita

William Eugene Johnson, Jr. was born in Boca Raton, Florida on March 7, 1943. He received his Bachelor of Arts degree from the University of Florida in August, 1966, and his Master of Rehabilitation Counseling in December, 1967 from the same institution. He received the Masters of Arts degree in psychology from Louisiana State University in May, 1971. He is presently an Instructor in the Department of Psychiatry at the University of Arkansas for Medical Sciences at Little Rock, Arkansas.
Candidate: William Eugene Johnson, Jr.

Major Field: Psychology

Title of Thesis: Imitative Aggression as a Function of Race of Model, Race of Target and Socioeconomic Status of Observer

Approved:

[Signatures]

Major Professor and Chairman

James B. Fraynham
Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:

April 13, 1976