THE EFFECTS OF PEER MODELING ON RACIAL ATTITUDES OF YOUNG CAUCASIAN CHILDREN

DISSERTATION

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By

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This dissertation is dedicated to my husband, William Lee Newkirk, who exhibited optimum amounts of sympathy and forbearance throughout the ordeal of this project.
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iii
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>VITA</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td><strong>CHAPTER ONE: INTRODUCTION</strong></td>
<td></td>
</tr>
<tr>
<td>Introductory Note</td>
<td>1</td>
</tr>
<tr>
<td>Review of the Literature</td>
<td>4</td>
</tr>
<tr>
<td>Purpose of This Study</td>
<td>46</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>48</td>
</tr>
<tr>
<td><strong>CHAPTER TWO: METHODS</strong></td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
<td>50</td>
</tr>
<tr>
<td>Measures</td>
<td>53</td>
</tr>
<tr>
<td>Assignment of Subjects</td>
<td>61</td>
</tr>
<tr>
<td>Test Procedures</td>
<td>63</td>
</tr>
<tr>
<td>Experimental Design</td>
<td>66</td>
</tr>
<tr>
<td>Statistical Design</td>
<td>66</td>
</tr>
<tr>
<td><strong>CHAPTER THREE: RESULTS</strong></td>
<td></td>
</tr>
<tr>
<td>Pretest Scores</td>
<td>69</td>
</tr>
<tr>
<td>Analyses of Pretest-versus-Posttest Scores</td>
<td>75</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS (CONT)

<table>
<thead>
<tr>
<th>Chapter/Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAPTER FOUR: DISCUSSION AND SUMMARY</td>
<td></td>
</tr>
<tr>
<td>Discussion</td>
<td>87</td>
</tr>
<tr>
<td>Summary</td>
<td>97</td>
</tr>
<tr>
<td>APPENDICES</td>
<td></td>
</tr>
<tr>
<td>A. Sample Parental Consent Form</td>
<td>103</td>
</tr>
<tr>
<td>B. Stories and Descriptions of Pictures of Preschool Racial Attitude Measure II</td>
<td>107</td>
</tr>
<tr>
<td>C. Tabulation of Analysis of Variance</td>
<td>113</td>
</tr>
<tr>
<td>LIST OF REFERENCES</td>
<td>117</td>
</tr>
</tbody>
</table>
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mean Color-Meaning (CM) Scores in Various CMT I Studies</td>
<td>26</td>
</tr>
<tr>
<td>2. Mean Racial Attitude (RA) Scores in Various Studies Employing the Pram I Procedure</td>
<td>31</td>
</tr>
<tr>
<td>3. Mean Ages of Subjects (In Years)</td>
<td>52</td>
</tr>
<tr>
<td>4. Bias Categories and Chance Expectancies of a Child's Obtaining a Score in any of Them</td>
<td>55</td>
</tr>
<tr>
<td>5. Cells in the Experimental Design</td>
<td>67</td>
</tr>
<tr>
<td>6. Percentage of Pram II Pretest Scores Falling Into Each of Five Categories</td>
<td>71</td>
</tr>
<tr>
<td>7. Mean Scores on Pretest</td>
<td>73</td>
</tr>
<tr>
<td>8. Mean Scores on Pretest Grouped According to Subtest Taken</td>
<td>74</td>
</tr>
<tr>
<td>9. Mean Scores on Pretest and Posttest and Mean Differences Between Scores on the Two Tests</td>
<td>76</td>
</tr>
<tr>
<td>10. Mean Differences Between Pretest and Posttest Scores</td>
<td>77</td>
</tr>
<tr>
<td>11. Mean Differences Between Pretest and Posttest Scores, According to Grade and Treatment Group</td>
<td>78</td>
</tr>
<tr>
<td>12. Mean Differences Between Pretest and Posttest Scores, According to Sex, Order in Which Subtests were Given, and Popularity of Subject</td>
<td>82</td>
</tr>
<tr>
<td>13. Mean Differences in Pretest-vs-Posttest Scores According to Age Group, Sex, and Treatment Group</td>
<td>91</td>
</tr>
<tr>
<td>14. Analysis of Variance for Pretest Scores: Experimental and Control Groups</td>
<td>113</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>15. Analysis of Variance for Difference Between Pretest and Posttest Scores: Experimental and Control Groups</td>
<td>114</td>
</tr>
<tr>
<td>16. Analysis of Variance for Difference Between Pretest and Posttest Scores: Experimental Group</td>
<td>115</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mean Differences Between Pretest and Posttest Scores According to Sex, Order in which Subtests were Given, and Popularity of Subject.</td>
<td>83</td>
</tr>
<tr>
<td>2. Mean Differences Between Pretest and Posttest Scores, According to Sex, Popularity of Subject, and Order in which Subtests were Given</td>
<td>85</td>
</tr>
</tbody>
</table>
CHAPTER ONE
INTRODUCTION
I. INTRODUCTORY NOTE

Among the various processes of socialization, observational learning is usually given a prominent role. This is regardless of whether the explanation is in terms of psychological or sociological variables. A vast amount of learning occurs in social situations in which the child himself remains inactive but is able to view the efforts and the effects of adults and peers as they enter into activities with objects and other people. There is much experimental evidence which indicates that the child's tendency to imitate enables him, through observation of others' behavior, to develop new response patterns (Bandura, Ross and Ross, 1961; Bandura, Grusec and Menlove, 1966) and change his behavior according to permissions and prohibitions in his environment (Walters and Parke, 1964; Bandura, 1965b).

Wilson (1958) found that preschool children who watched an adult model perform a discrimination task learned much more quickly than subjects who were given standard discrimination learning trials. Thus, although they had not been instructed to do so, the children learned the nature
of the critical cues while observing the model's choices. Rosenblith (1959, 1961) found that for kindergarteners, observing a model was more effective than having additional trials (with Porteous Mazes) in improving maze performance. As Bandura (1965b) notes, imitation must be pervasive in its influence because 1) it is efficient; 2) there are so many kinds of adaptation to physical and social risks where trial-and-error learning would be inconceivable; and 3) the child learns so much for which it is difficult to imagine a reinforcement shaping history.

This study will examine the influence of peer modeling on one measure of racial bias of white preschool and second grade children. Children as young as four years have demonstrated a bias in favor of white people and against black people. There is much evidence to indicate that children learn their racial attitudes in part from adult models, especially parents, but to date little research has been generated concerning the extent to which youngsters learn racial biases from peers.

It is known that peers strongly influence the behavior of preadolescents and adolescents. In fact, it is generally accepted that peer influences on personality development and behavior are probably second in importance only to those of parents. However, Hartup (1970) has reported that in spite of the importance of peer influences, a) there has been relatively little developmental research concerning peer relations; b) age differences have not been studied;
and 3) most of the modeling research with children has involved adult models.

This initial chapter will review the theoretical bases of imitation and the empirical evidence regarding observational learning and racial biases in young children. Children are repeatedly exposed to numerous models. What types of behavior do children acquire as the result of observing others? Who are the people and what are the behaviors that children are most likely to imitate? From whom do children acquire racial attitudes? What variables enhance or impede the acquisition and performance of modeled behaviors?
II. REVIEW OF THE LITERATURE

THEORETICAL BASES OF IMITATION

ANAACLITIC AND DEFENSIVE IDENTIFICATION

Basic to an understanding of the phenomena of observational learning and imitation is the concept of identification. Many hypotheses concerning imitation have been generated by the anaclitic and defensive theories of identification. In a summary of Freud's notions on identification Bronfenbrenner (1960) notes that although Freud's ideas about the subject changed much during his life, his concept of identification was always based on an individual's "emotional tie with an object," typically the parent.

In his essay "On Narcissism" Freud (1925) developed the idea of a type of attachment called "anaclitic object choice," which is based on a dependency relationship with the mother or caretaker. He hypothesized that the relationship later became the basis of one of two mechanisms of identification: anaclitic identification and identification with the aggressor, or defensive identification. The first of these mechanisms involves the child's responding to an absent or depriving loved person by seeking to replace her in his own behavior. The second mechanism is concerned with the resolution of the Oedipal Complex.
Freud theorized that the young boy reduced anxiety arising from anticipated punishment (for incestuous wishes and rivalrous feelings) by emulating the characteristics of the threatening father.

Parsons and Shils (1951) take Freudian theory as their point of departure. At the core of their concept of identification is a generalized motive to become like another. They further contend that identification results in the internalization not only of moral standards but also of cognitive and expressive features of the parents and, through the parents, the culture as a whole.

Many hypotheses about imitation have been generated by the anaclitic and defensive theories of identification. Although Bandura (1963b) and others have roughly equated identification with imitation, it has been argued that the motivation to imitate peers and adults is not nearly as strong or as complex as is identification with parents. However, it can be argued that the initial identification with parents may serve as a prototype for identification with and imitation of other people. The circumstances resulting in identification with parents may predispose the child to imitate others although in many instances imitation may be viewed on a smaller emotional scale.

It has frequently been shown that upon encountering a situation in which stimuli and expectations are ambiguous an individual will, in responding, rely on his past experiences and established behavioral repertoire as well
as on social cues. Although the motivation to imitate persons outside an individual's family may not contain the strength of anaclitic or defensive identification, the same mechanisms may be at work. Individual differences in imitative tendencies may be patterned after chosen modes of identification. Since it is theorized that identification develops as the result of strong emotional bonds and wrenching conflicts with parents, it is reasonable to hypothesize that the tendency to imitate others may reflect a powerful motive to "become like another." The child has added to his repertoire the concept of behaving as another person does. He has learned that such an action can contribute to acceptance by his caretakers, increasing his emotional security and decreasing anxiety.

DEVELOPMENTAL IDENTIFICATION

A mechanism related to both anaclitic and defensive identification is described by Mowrer. What he calls developmental identification develops when a child has a rewarding, warm, and affectionate relationship with his parents. Mowrer hypothesizes that in response to conflict and parental discipline . "...the child discovers that he can satisfy his parents and at the same time still his own inner turmoil if he will only do one thing: accept the standards of conduct and social values which his parents are holding up to him and make them his standards and his values. (1953, p. 72)
STATUS-ENVY

Whiting (1959, 1960) has proposed an extension of Freud's defensive identification hypothesis in which envy and vicarious gratification rather than anxiety reduction are presumed to be the motivational and reinforcing mechanisms for the identificatory behavior. Whiting regards any forms of reward—maternal or social—as valued resources around which rivalry may develop. The theory further assumes that the more strongly the child envies the status of another person in respect to the consumption of desired resources of which he feels deprived, the more he will enact the role of that person.

SOCIAL POWER

Other writers (Maccoby, 1959; Mussen and Distler, 1959; Parsons, 1955) assume that the controller, rather than the consumer of the resources is the main source of imitative behavior. The findings of Bandura, Ross and Ross (1963b) support the social power theory of imitation. In two experimental treatments, regardless of whether a rival adult or the child received the rewarding resources, the model who possessed rewarding power was imitated to a greater degree than was the rival or ignored model. It must be noted, however, that the children in the study also reproduced some of the elements of behavior exhibited by the model who occupied the subordinate role. In other words, the children did not just imitate one model exclusively. Instead, they exhibited a novel pattern of
behavior representing a combination of elements from both models.

LEARNING THEORY

In the learning theory tradition, Miller and Dollard (1941) portrayed imitation as an instrumental response that was acquired through reinforcement. For example, a child seeing an older sibling obtain a reward for a certain behavior might then imitate the behavior and be similarly rewarded. Eventually, imitation, not only of specific behaviors, but as a generalized response disposition, was reinforced. In attempts to reconcile psychoanalytic and learning theory concepts, Miller, Dollard, Sears, and their colleagues put imitation on a continuum with identification. Basically, their position was that identification involved a persisting disposition or learned drive to imitate not only the behavior but the values and feelings of the model.

While the instrumental value of imitation may indeed lead to extrinsic reinforcement, it is unlikely that instrumental learning exclusively accounts for children's propensity to imitate. It must be noted that infants as young as three to six weeks (Achenbach, 1974; Gardner and Gardner, 1970) have been observed to imitate tongue and mouth movements.

At least one learning theorist (Sears, 1957) has reached similar conclusions concerning the properties of identification: "It is as if the child had learned a general principle: 'to be like my father and mother.' He
then incorporated many of their psychological properties without, in each instance, appearing to receive overt rewards for doing so." (p. 152) Sears restates Freud's theory of anaclitic identification in learning theory terms: "...when he is motivated to secure the mother's nurturing responses, he can imitate her affectionate attitudes and gestures himself and hence secure at least partial gratification of his dependency drive." (pp. 154-155)

SECONDARY REINFORCEMENT

One mechanism of identification which is derived from learning theory is the concept of secondary reinforcement. Mowrer (1950) theorized that rewards given to the subject by a model increase the secondary reinforcing value (for the subject) of behaviors shown by the model. It is presumed that--as a consequence of stimulus generalization--when the subject reproduces these behaviors, the proprioceptive feedback from the imitative acts is secondarily reinforcing. This secondary reinforcement predisposes the subject to reproduce the behavior of the model. For example, if a parent is a loved or prestigious person who the child is rewarded for emulating, the emulation can become a need in its own right; and the imitated behavior can become in and of itself reinforcing. Mowrer originally provided this theory as an explanation for the imitation of verbal behavior; however, the theory has since been extended to account for all imitative acts
(Mowrer, 1960; Sears, 1957).

SOCIAL SYSTEMS

In an unpublished paper reviewed by Bandura (1969b), Reiss (1966) contrasted theories of socialization based on the family unit with those emphasizing institutional systems. Reiss feels that the family unit model cannot adequately explain the outcomes of socialization.

Personality theories generally contend that values, attitudes, and behavior patterns are for the most part communicated through the parent-child relationship. Reiss observes that, assuming a twenty-year difference between generations, a relatively long period elapses between parental input and the time when the supposedly internalized social values can be picked up by succeeding descendants. If this were the case, the rate of social change would be very slow, when in fact, extensive society-wide shifts in normative behavior often occur within a single generation. Reiss argues that therefore the parent-child relationship cannot be the major agency of cultural transmission. Instead, he maintains, standards of conduct are instilled by institutions such as religious, political, legal, and educational agencies and are regulated by collectively enforced sanctions. Change, Reiss feels, starts at the level of the social organization, while modifications issuing within the family are of minor social consequence. For example, racial discrimination in public facilities is more effectively curtailed.
through Supreme Court decisions than by waiting for bigoted parents to teach their children tolerant attitudes which might result in the fair treatment of black people when the children become members of school boards or motel operators twenty years later.

Since social agencies are delegated a great deal of power to administer effective rewards and punishments to people, collectively enforced sanctions can yield and widespread changes in behavior. Bandura (1969b) points out, however, that a systems theory cannot by itself explain the variety of socialization outcomes that exist even in relatively homogeneous sub-cultures. He notes that the behaviors prescribed by the social system have to be implemented by parents and other adults close to the child. Parents who do not agree with culturally sanctioned codes of behavior and who exhibit social deviance tend to produce children who are also socially deviant. In addition, parents generally resist immediately adopting new customs, technologies, and values.

Social learning is a continuous process, in which established patterns of behavior often disappear or change markedly and new types of behavior appear. The behaviors transmitted to children from parents include aspects of their social heritage as well as response tendencies picked up from many sources during later periods of development. As a result, significant cross-generational changes can occur as a function of transmission by the family unit.
VARIABLES AFFECTING IMITATION

Although it is apparent from informal as well as formal observation that children are able to learn new behaviors and change old ones as the result of watching other people's actions, the degree to which children will reproduce a model's behavior varies from child to child and situation to situation. Often it is extremely difficult to determine the factors which impede or facilitate observational learning and imitation. Investigators have to date determined a number of variables which appear to influence the amount of matching behavior which is acquired and performed.

ACQUISITION-VS-PERFORMANCE: Bandura (1969) notes that in evaluating theories of identification or modeling phenomena it is important to distinguish between acquisition and performance of imitative behavior. He contends that these occurrences are determined by different sets of variables. Bandura points out that a number of theoretical formulations can account for the control of previously learned responses but fail to explain how new behaviors are acquiredobservationally. These may be learned under circumstances in which an observer does not overtly perform the model's behaviors during the learning phase, reinforcers are not given to either the model or the observer, and the observer may not reproduce the behavior for days, weeks, or months.
Bandura (1965) and Hartup and Coates (1967) have demonstrated that mere exposure to modeled behavior is not sufficient to cause imitative learning to take place. In Bandura's study, even when given strong incentives the children were unable to reproduce the model's entire repertoire of behavior. Hartup and Coates found that while children in their study imitated the model's altruistic behavior, they did not imitate his/her verbalizations to the same extent and imitated incidental actions even less.

**ATTENTIONAL PROCESSES:** In order for an individual to acquire and reproduce a model's behavior, he must attend to, recognize, and differentiate the distinctive features of the model's responses. In addition, the observer has to be motivated to reproduce the behavior, and prior training in discriminative observation may affect what aspects of the environment will be of most interest to him. Furthermore, it is likely that the observer will reproduce the modeled behavior more completely when he is putting previously acquired behaviors together into new patterns than when the modeled responses are completely new to him (Bandura, 1969b).

**IMAGINAL AND VERBAL REPRESENTATIONS:** According to Bandura (1969b), observational learning involves two representational systems, an imaginal one and a verbal one. Imagery formation is assumed to occur through sensory conditioning. As the subject observes the model he
responds perceptually. These responses become associated in sequence and are integrated on the basis of contiguity of stimulation. The images can function as mediators for retrieving and reproducing the observed behavior.

The second representational system involves verbal coding of observed events. When the model's behaviors have been transformed into verbal symbols, the observer can later reproduce the behaviors by giving himself covert verbal instructions. It is noteworthy (White, 1970) that in specifying the need for imaginal and verbal representation the learning theorists move toward Piaget's (1962) reconstructions of the child's cognitive development and Kohlberg's (1966) hypotheses of the child's psychosocial development. Piaget and Kohlberg attribute much development of imitative abilities to central operations.

Bandura, et al. (1966), have demonstrated how important symbolic representation can be to observational learning. In their study children were shown a film of complex sequences of modeled behavior. The different groups of children were instructed to either a) verbalize the novel responses as they were performed by the model; b) watch attentively; or c) count rapidly while watching the film. The results of the study showed that the children who had generated verbal equivalents of the modeled behavior imitated significantly more of the model's behavior than did those who simply watched. The children who had counted during the film showed the least amount of imitation. Gerst (1968)
has also demonstrated that verbal coding operations facilitate observational learning.

**ACTUAL AND EXPECTED CONSEQUENCES:** Sears (1951) points out that psychologists concerned with interpersonal transactions need to think in terms of dyads. One cannot understand the antecedent behaviors of one person and the consequent behaviors of another unless he considers that individuals are dependent upon one another and react to one another's behaviors in terms of expectancies.

Bandura et al. (1963c), have found that the anticipation of positive or negative reinforcement may increase or decrease the occurrence of the observing behaviors which are necessary for imitative learning. The actual or expected response-consequences to either the model or the observer may be important influences on the performance of imitation. In one study children who saw an aggressive model be rewarded imitated the successful aggressor more and showed more aggression than did children who had seen an aggressive model punished. It is noteworthy that in this instance many of the children voiced criticisms about the model's behavior but imitated the objectionable behavior when the model had been successful. Zajonc (1954) also found that children chose a successful leader as their model regardless of the types of behavior that the leader used to obtain the rewards. Thus, it appears that in some instances "successful villainy outweighs the viewer's value system."
In the same study Bandura et al. also found that in the cases of children whose aggressive responses were strongly inhibited or only weakly established, the provision of models demonstrating prosocial behavior seemed to be effective in helping the children to acquire and maintain self-control.

In Walters and Parke's study (1964) it appeared that most of the children, because of their previous social-learning experiences, anticipated being punished for breaking a prohibition in a temptation situation. In addition, the authors found that when the children saw that a "misbehaving" model was not punished and that an adult did not react to behavior that had previously been punished, some of the children became somewhat disinhibited. There is evidence (Bandura, 1965) that some sex differences in aggression may primarily reflect differences in willingness to exhibit aggressive behaviors rather than differences in learning or masculine-role identification. These differences may emerge from differing reinforcement histories.

IMITATION OF REWARDING MODELS: Several theories of identification have generated the hypothesis that rewarding models are imitated to a greater extent than nonrewarding models. The theories include the theory of anaclitic identification developed by Freud (1914), the secondary reinforcement theory of imitation (Mowrer, 1950, 1960), and the extension of these theories framed by Sears (1957)
and Sears, Rau, and Alpert (1965).

Much research has been conducted to test the rewarding-model hypothesis. One kind of evidence favoring this hypothesis comes from studies of the relationship between a) parental affection and nurturance and b) identification-related behaviors in children. Sears (1953) reported that boys with warm, affectionate fathers used the father doll in play more often than did boys of colder, less affectionate fathers. Mussen and Distler (1960) found that young boys are more likely to acquire masculine behaviors if their relationships with their fathers are rewarding and affectionate. The results of this study may also be seen as supporting a role-taking or social power hypothesis. According to this hypothesis, a boy will be more strongly motivated to imitate his father, or take on his role, if he has intensive interactions with that parent and regards him as having a great deal of power. Mussen and Distler infer that since they are warm and affectionate, the fathers of highly masculine boys interact more frequently and more intensively with their sons. Therefore these boys have more experience in practicing their appropriate sex roles.

Bandura and Huston (1961) found that on a two-choice discrimination task children more frequently imitated an adult model's incidental behaviors when the model had been very nurturant toward the subject before the experimental session. However, the nurturant and non-nurturant interactions conditions did not significantly influence the
subjects' imitation of the model's choices on the discrimination task.

Although the data generally support the hypothesized relationship between nurturance and imitation, some analyses suggest that rather than showing a generalized disposition to emulate nurturing models, children exhibit imitative responses which are specific to the situation. For example, Mischel and Grusec (1966) found that nurturant interaction with a model fostered children's imitation of the model's neutral behaviors, but it did not increase their willingness to imitate behaviors which they found aversive. In a study by Bandura and Huston (1961) the model's rewardingness enhanced imitation of verbal and stylistic behaviors. However, the children imitated aggressive behaviors whether the model had been nurturant or not.

In some cases nurturance appears to lessen imitation. In a study by Bandura, et al. (1967) highly rewarding interaction with an adult model led to subjects' accepting low behavior standards set by peers and indulging in self-gratification rather than modeling the high achievement demands modeled by the nurturant adult.

REINFORCEMENT HISTORY: Hartup and Coates (1967) found one source of variation in the effect of the model's rewardingness on imitation to be the subject's general history of reinforcement from persons like the model. In this study preschool children who had previously received frequent reinforcement from peers were more likely to imitate the
altruistic behaviors of a rewarding peer model than a non-rewarding peer. Children who had been only infrequently reinforced by peers imitated a rewarding model as much as the more popular children did; however, they imitated nonrewarding peers to a greater extent.

**THE INFLUENCE OF OTHERS: EMPIRICAL EVIDENCE**

This study will examine the influence of peer modeling on the racial attitudes of young children. Responsiveness to peers is evident during infancy. However, it apparently lags behind responsiveness to adults. There are several explanations for this. Other babies are less salient stimuli for infants than are active, mobile adult caretakers. Also, the actions of other infants are less familiar stimuli than are the sight and sounds of adults. Adults nurture the infant and respond systematically to the infant's signals more often than do other infants.

During the years between two and five social participation among children changes both quantitatively and qualitatively (Parten, 1932). In nursery school groups the amount of participation is positively correlated with chronological age \((r = .61)\) and, to a lesser degree, with IQ \((r = .26)\). The older children spend more time in parallel, associative, and cooperative activities and less time in idleness, solitary play, and on-looker behavior. They seek more attention and praise from peers (Hattwick and Sanders, 1938; Martin, 1964) and less from adults (Heathers, 1955; Martin, 1964). Charlesworth and Hartup
(1967) conducted an observational study of the frequency of four types of "generalized positive reinforcement" in the peer interactions of nursery school children: 1) giving positive attention and approval; 2) affection and peer acceptance; 3) submission; and 4) tangible objects. These behaviors occur more often among four-year-olds than among three-year-olds.

IMITATION OF MODELS

Behavioral similarities are generally largely attributable to modeling processes. However, it is difficult to identify the sources of emulated behavior. Children are repeatedly exposed to multiple models including teachers, neighborhood adults, peer companions, and the prestigious models in television programs and films. It is doubtful that children rely exclusively on parents as models for the diverse behaviors which they display at different periods of development. In fact, the findings of Lazowick (1955) indicate that children may show no greater similarity to their actual parents than to randomly matched parental figures.

IMITATION OF ADULTS: Adult models have been shown to be effective in eliciting and modifying children's behavior in situations involving live and filmed aggression (Bandura and Huston, 1961; Bandura et al., 1961; Bandura, et al., 1963; Hicks, 1965), patterns of self-reinforcement (Bandura and Kupers, 1964; Mischel and Liegbert, 1966), and altruism (Midlarsky and Bryan, 1967; Rosenhan and White, 1967).
There is evidence that children learn racial attitudes in part from adult models, especially parents (Yarrow, Trager, and Miller, 1952; Bird et al., 1952; Goodman, 1952). Goodman writes,

"The importance of the child's models, the people whom he sees often and from whom he is disposed to learn, has been repeatedly indicated....

"From the people who are the dominant figures in his world the child learns most.... He soaks up not only what they give him but also what they themselves are, and frequently he absorbs the conflicting views--the inconsistencies--they harbor."

"If their [racial] awareness is high and their feelings strong, the child's awareness is likely enhanced."

IMITATION OF PEERS: In training their children parents frequently demonstrate specific skills and behaviors which they desire in their children. However, because the parent and child differ so much in age, social-response patterns demonstrated by parents and other adults can only serve as general guides for young children in their daily social interactions. Children must rely on older siblings and peers as models for specific modes of behavior that parents do not usually provide. In fact, in some cultures (Bronfenbrenner, 1962), peers supersede parental figures as the principal models and socialization agents.

While studying the relative effects of peers and adult models, Hicks (1965) found that children (41-76 months old;
mean age was 61 months) were influenced immediately more by male peers modeling aggression than by adults. Male adult models, however, had the greatest lasting effect on the children's imitation. In Bandura and Kupers' (1964) study, seven-to nine-year-olds playing a bowling game adopted the self-reinforcement criteria of peer models, although adults were generally more effective modeling stimuli.

Hartup and Coates (1967) successfully employed nursery school children as altruistic peer models. In Rushton's (1965) study (subjects were seven- to nine-year-olds) peer modeling of donating behavior was highly effective both immediately and after eight weeks and proved generalizable across changes in the testing situation. Their model's "preaching" appeared highly effective at follow-up.

Investigators have also employed peer models in studies of vicarious reduction of anxiety and avoidance behaviors. In Melamed and Siegel's (1975) study, four- to twelve-year-old children about to undergo elective surgery were shown either a film of a peer model being hospitalized and receiving surgery or an unrelated (control) film. Experimental subjects exhibited reduced pre- and postoperative fear arousal and were less likely than controls to display posthospital behavior problems. Bandura et al. (1967; 1968) demonstrated that after watching a filmed peer exhibit progressively more intimate interactions with a dog, nursery school subjects (three to five years old) who had previously
feared and avoided dogs displayed stable reductions in avoidance behavior.

RACIAL AWARENESS, IDENTIFICATION, PREFERENCES

Awareness of the physical characteristics related to race has been demonstrated in very young children. In an intensive observational study of 2- to 3-year-olds in an interracial nursery school, Stevenson and Stevenson (1960) found that most of the children were aware of and curious about race-related physical differences. Goodman (1952) concluded that 85% of the white and black 4-year-olds observed and interviewed in her study demonstrated "medium" or "high" racial awareness as reflected in perception, vocabulary, and thought modes.

A number of studies have examined racial awareness in terms of the child's racial identification and preferences (Clark and Clark, 1952; Gregor and McPherson, 1966; Morland, 1966; Greenwald and Oppenheim, 1968; Fulcher and Perry, 1973). Typically, children are asked to respond to questions such as, "Which one looks like you?" and "Which is the nice one?" by choosing between dark- and light-skinned dolls or figures in photographs. Nearly all white children respond in the manner of a "normal" ethnocentric group (Gregor and McPherson, 1966). In other words, they identify themselves as white and express a preference for light-skinned dolls and human figures. There are indications that racial identification and preferences among black children are not so clear-cut or without conflict. Morland
(1966), Clark and Clark (1952), and Gregor and McPherson (1966), report that a significant number of black children identify with white dolls and white people in photos, and many show strong preferences for the white figures. Other researchers, though, for example Greenwald and Oppenheimer (1968), have shown that the magnitude of self-misidentification among black children is greatly reduced when the choices include mulatto dolls as well as dark- and light-skinned ones.

Pro-in-group feelings do not necessarily mean hostility toward out-group members. Investigators in several racial identification and preference studies have concerned themselves with responses about likes and preferences rather than dislikes. For example, children in the Gregor and McPherson and Clark and Clark studies were asked three or four questions about positive qualities of the dolls and four about the racial identity, but they had only one opportunity to assign a negative quality to one of the dolls. Interestingly enough, 84 of the 92 black children tested in the Gregor and McPherson study refused to choose either doll when asked to "Show me the doll that looks bad." (Almost all of the white children responded to the request). This balking at a question about rejection suggests that, for children to whom race is very important, differentiating races in terms of negative attributes is more emotion-laden than is focussing on positive attributes.
In a 1970 review Hartup notes that while informal preschool peer groups show cleavages by sex and race, there is little evidence that this is due to strong rejection of the other sex or race (Stevenson and Stevenson, 1960; McCandless and Hoyt, 1961; Lambert and Taguchi, 1956). Rather, perceived similarity and norm-sharing between like-sex and like-race children may help to determine peer group membership among young children.

BIAS FOR WHITENESS

The fact remains, however, that very young children—black and white—are aware of racial differences, know that these differences are important, and soon develop a bias for whiteness and against blackness. Several researchers have employed semantic differential studies of young adults to demonstrate that the tendency to evaluate the color white more positively than the color black is widespread in Western cultures (Adams and Osgood, 1973; Williams, 1964; Williams, et al., 1973; Williams and Carter, 1967; Williams and McMurty, 1970; Williams et al., 1970; Williams et al., 1971). Renninger and Williams (1966), using a picture-story procedure (the Color Meaning Test—CMT I) observed this tendency in the responses of white preschool children. In this procedure the child is asked to choose between drawings of two animals, one white and one black, but otherwise identical.

The evidence from several CMT I studies (see Table 1) indicates a widespread tendency toward pro-white/anti-black
<table>
<thead>
<tr>
<th>INVESTIGATOR(S)</th>
<th>N</th>
<th>AVERAGE AGE</th>
<th>STATE</th>
<th>MEAN CM*</th>
</tr>
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<tbody>
<tr>
<td>WHITE SUBJECTS:</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Williams &amp; Roberson (1967)</td>
<td>111</td>
<td>5-4</td>
<td>N.C.</td>
<td>10.0</td>
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<tr>
<td>Williams &amp; Edwards (1969)</td>
<td>84</td>
<td>5-6</td>
<td>N.C.</td>
<td>9.2</td>
</tr>
<tr>
<td>Skinto (1969)</td>
<td>28</td>
<td>7-6</td>
<td>W.Va.</td>
<td>9.8</td>
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<tr>
<td>Figura (1971)</td>
<td>23</td>
<td>5-0</td>
<td>Ill.</td>
<td>10.2</td>
</tr>
<tr>
<td>BLACK SUBJECTS:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Skinto (1969)</td>
<td>26</td>
<td>7-6</td>
<td>W.Va.</td>
<td>8.4</td>
</tr>
<tr>
<td>Vocke (1971)</td>
<td>45</td>
<td>5-6</td>
<td>S.C.</td>
<td>9.5</td>
</tr>
<tr>
<td>Vocke (1971)</td>
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<td>5-6</td>
<td>S.C.</td>
<td>8.6</td>
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<tr>
<td>Williams &amp; Rousseau (1971)</td>
<td>89</td>
<td>5-3</td>
<td>N.C.</td>
<td>8.9</td>
</tr>
<tr>
<td>Figura (1971)</td>
<td>56</td>
<td>5-0</td>
<td>Ill.</td>
<td>7.6</td>
</tr>
</tbody>
</table>

1 John E. Williams, et al., 1975a

*Mean of mean for white children is 9.6; mean of mean for black children is 8.6. A score between 9 and 12 indicates a definite W+/B- bias.
(W+/B) bias in all groups of children. The W+/B- bias is generally evident among black preschoolers but to a lesser degree than among the white preschoolers. Even when Vocke (1971) used a black examiner to test black preschoolers, 53% showed evidence of W+/B- bias while only 4% showed evidence of B+/W- bias. In these studies there is no evidence of a systematic association between CMT scores and either age (The average age of the subjects ranged from 4-4 to 7-6 years) or geographic region (North Carolina, West Virginia, Ohio, Illinois, New York). Other investigators using different methodologies (Stabler and Johnson, 1972; Stabler et al., 1969; Stabler, Johnson, and Jordan, 1971), and Williams, Boswell, and Best (1975), using a revision of the Color Meaning Test (CMT II), have repeatedly demonstrated the tendency of many preschoolers to see white as more desirable than black.

RACIAL BIAS

Goodman (1952) and others have found evidence that some preschoolers do reject other-race children, specifically that white children reject black children. As Goodman has documented, four-year-olds are capable of race prejudice:

During those visits we learned that four-year-olds see and hear and sense much more about race than one would suppose after watching them at school or even at home.

Sarah [a white child] is an excellent example. At her nursery school there were a few Negro children and one Negro teacher. But week after week her
behavior at school gave no indication that she either noticed or cared about color. Yet the Observer's final report on her behavior during the play interviews read as follows:

Awareness of race differences is accurate and verbalized. She is clearly aware of what she calls "black people" and has rather strong feelings about them. She shows a rather consistent rejection of Negroes. She is clearly aware that "blacks" are very different people from "whites." (p. 27).

Whether or not the majority of preschoolers do reject other-race children from their peer groups or would if they had interracial contacts, they do demonstrate a tendency to value whiteness and lightness over blackness and darkness. By the ages of three and four years they are developing the race- and color-related value concepts which may be precursors of racial prejudice. Goodman concludes, "The evidence is overwhelming that many of our children have developed awareness and feelings far in excess of their habits of expressing them in behavior. Those ways of expressing racism which are common among older children and their parents are rarely a part of our four-year-old's accumulation of learned ways of doing. But much that is relevant to his later doings has already taken its place in that complex system we call his personality." (1952, p. 28).

Williams et al. (1975b), have developed the Preschool Racial Attitude Measure II (PRAM II), a procedure for measuring young children's evaluative responses to light- and dark-skinned human figures. PRAM II is a longer
version of the PRAM I described by Williams and Roberson in 1967. During the administration of the PRAM II the child has twenty-four opportunities to choose between pictures of Caucasian (light-skinned) and Negro (dark-skinned) figures in response to evaluative adjectives. There are twelve positive and twelve negative evaluative adjectives. The two figures in each picture are identical except for difference in skin color.

While there is a lack of systematic knowledge as to what "race" means to preschool children, some evidence indicates that at this age skin color is the most salient feature associated with race. Williams and Roberson (1967) have demonstrated that preschoolers show little hesitancy in identifying persons as "white," "Negro," "colored," etc., when skin-color is the only basis for discrimination. Williams et al. note that while the attitudes assessed may or may not be "racial" in their origins, it seems clear that they are "racial" in their implications.

In a summary of the PRAM II standardization data Williams et al. report the tendency toward high pro-Caucasian anti-Negro (C+/N- scores among both white and black children. The scores of 60% of the white children and 40% of the black children reflect a definite C+/N- bias. The scores of the black preschoolers averaged 2-3 points (in a 0-24 score range) lower than the scores of the white children.
Investigators have employed the PRAM I procedure in several different locales, with groups of children differing in age, race, and social class. The results of several studies are summarized in Table 2. There are twelve stimulus pictures in the PRAM I, and a score between 9 and 12 represents definite C+/N- bias. In these studies the mean racial attitude scores in all groups was in the upper score range: the mean of means for white children was 10.0; the mean of means for black children was 8.7. The results of the positive-adjective versus negative-adjective comparison indicate that scores on these two sub-scales were substantially related. In other words, children who chose light-skinned figures in response to positive adjectives also tended to choose dark-skinned figures in response to negative adjectives, and vice-versa.

FACTORS RELATED TO IN-GROUP/OUT-GROUP ORIENTATIONS

Some data suggest that the out-group orientation of black children is in part a function of geographical location and the amount of contact they have with white people. One hypothesis suggests that contact with white people enhances out-group orientation. Gregor and McPherson's (1966) study of racial attitudes among children in segregated schools in a deep-South metropolitan area shows black children who were generally in-group oriented though less so than the white children. Clark and Clark (1947) had found that black children attending segregated schools in peripheral southern states showed a marked
### TABLE 2

**MEAN RACIAL ATTITUDE (RA) SCORES IN VARIOUS STUDIES EMPLOYING THE PRAM I PROCEDURE**

<table>
<thead>
<tr>
<th>INVESTIGATOR(S)</th>
<th>N</th>
<th>AVE. STATE-YEAR</th>
<th>MEAN RA&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WHITE SUBJECTS:</strong></td>
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<tr>
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<td>111</td>
<td>5-4 N.C. ('66)</td>
<td>10.3</td>
</tr>
<tr>
<td>Williams &amp; Edwards (1969)</td>
<td>84</td>
<td>5-6 N.C. ('67)</td>
<td>9.6</td>
</tr>
<tr>
<td>Thompson&lt;sup&gt;a&lt;/sup&gt;</td>
<td>27</td>
<td>3-8 Cal. ('68)</td>
<td>9.1</td>
</tr>
<tr>
<td>Bridges&lt;sup&gt;a&lt;/sup&gt;</td>
<td>31</td>
<td>4-8 Tex. ('69)</td>
<td>9.7</td>
</tr>
<tr>
<td>Bridges&lt;sup&gt;a&lt;/sup&gt;</td>
<td>24</td>
<td>6-11 Tex. ('69)</td>
<td>11.5</td>
</tr>
<tr>
<td>Firestone &amp; Feinstein&lt;sup&gt;a&lt;/sup&gt;</td>
<td>16</td>
<td>4-11 Conn. ('69)</td>
<td>10.0</td>
</tr>
<tr>
<td>Keller&lt;sup&gt;a&lt;/sup&gt;</td>
<td>24</td>
<td>5-9 Ohio ('70)</td>
<td>9.8</td>
</tr>
<tr>
<td>Tse&lt;sup&gt;a&lt;/sup&gt;</td>
<td>30</td>
<td>4-4 N.Y. ('71)</td>
<td>10.0</td>
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<tr>
<td><strong>BLACK SUBJECTS:</strong></td>
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<td>5-5 S.C. ('70)</td>
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<td>McAdoo, H. (1970)</td>
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<td>5-6 Miss. ('70)</td>
<td>8.9</td>
</tr>
<tr>
<td>McAdoo, J. (1970)</td>
<td>65</td>
<td>4-6 Mich. ('70)</td>
<td>7.8</td>
</tr>
</tbody>
</table>

<sup>2</sup>John E. Williams, et al., 1975b

<sup>a</sup>Data from unpublished studies.

<sup>b</sup>Mean of means for white children is 10.0; mean of means for black children is 8.7. A score between 9 and 12 indicates a definite C+/N- bias.
preference for the white dolls of the test materials, and black children at integrated schools were even more out-group oriented.

Morland (1966), however, found out-group preference and identification to be greater in segregated black preschoolers in Virginia than in children attending integrated preschools in Boston. He found Southern white children to be more in-group oriented than Northern white children. Williams et al. (1975), using their picture/story measure (the others had used dolls) found no evidence that racial integration of the school influenced the general level of racial bias in black or white children. Thus, the data are inconsistent, and the specific variables governing racial in-group/out-group orientation have not been isolated.

It is reasonable to assume that one factor in the development of racial prejudice may be that people with skin color and facial features different from oneself are a readily identifiable out-group and can be believed to have the negative attributes assigned to out-group members or at least lack the positive qualities of in-group members. Through a series of studies involving groups of pre-adolescent and adolescent boys, Sherif and his colleagues (Sherif and Sherif, 1953; Sherif et al., 1961; Sherif and Sherif, 1964) have described group formation in childhood. Some of their hypotheses and findings are relevant to the in-group/out-group aspects of racial attitudes.
Sherif and his colleagues believe that when same-age children are brought together in physical proximity, group norms, rules, and "We-They" talk emerge. When inter-group contact is minimal, friendship choices center in the in-group. Over time the social unit itself becomes a salient source of satisfaction and frustration to individual group members. Shared attitudes and values become evident (Sherif and Sherif, 1953). The data suggest that dis-harmony between peer groups is most likely to arise when the groups compete against each other and experience frustration. In the Robbers Cave experiment, in which neither group experienced more success or failure than the other, Sherif et al. (1961) found that competition between two groups of fifth-graders promoted in-group solidarity and a marked increase in out-group hostility.

NORMATIVE THEORY

According to the "normative" theory of concept and attitude development, children gradually develop their pro-Caucasian/anti-Negro bias as a result of exposure to the anti-black prejudices of the white-dominated larger society. If this is so, then one would expect that 1) older children demonstrate more evidence of the bias than younger children; and 2) the more intelligent children will show more evidence of the concept/attitude than less intelligent children. In the Williams et al. (1975b) standardization study this was the case for the sex-role scores but not for the racial attitude scores. Subjects
ranged in age from 37 to 85 months, with a mean of 64 months. The correlations between PRAM II scores and age, sex, and IQ (Peabody Picture Vocabulary Test) were not statistically significant. The results of studies regarding possible race-of-examiner effects were inconclusive. In some cross-sectional studies Williams, Best, and Boswell (1975a) tested children in preschool and grades 1-4 and found that among white children pro-Caucasian/anti-Negro bias increased until the second grade and subsequently declined. There were no age trends for black children. In Clark and Clark's (1947) study 3- to 5-year-old black children tended to be more out-group oriented than 6- to 7-year-olds.

Williams et al. assert that their findings are inconsistent with the requirements of the general normative theory. They speculate that children's attitude scores are possibly related to individual differences in familial variables such as attitudes or cognitive characteristics of the parents. A second possibility is that children's attitudes toward light and dark people are influenced in part by early learning experiences with light and darkness (e.g., fear of darkness). This may be essentially independent of familial influences.

THE ROLE OF PARENTS

It is difficult to tease out the specific roles which parents play in the establishment of children's racial attitudes. Parents do not always agree with each other
concerning the kind and amount of communication about religious and ethnic attitudes that they should allow their children to experience (Bird, et al., 1952; Goodman, 1952). Many parents wish to ignore their children's interest in racial and ethnic differences and try to discourage talk about such things. Furthermore, parents' ideologies and actions often conflict on such emotion-laden issues, and feelings and beliefs are often confused and inconsistent (Yarrow, Trager, and Miller, 1952). Thus, children do not usually develop their attitudes toward religious and ethnic groups under conditions of open communication and consistent reinforcement.

In a study of first- and second-graders and their parents, Yarrow, Trager, and Miller (1952) interviewed parents (usually mothers) about the kinds of training in human relations and racial and religious attitudes that they provided for their children. While their data did not permit conclusions about cause and effect of racial prejudices, they did point to marked similarities between the perceptions and attitudes of parents and children. The investigators found that this group of parents (lower class and lower-middle class, in Philadelphia) lacked the cultural and anthropological information they needed to adequately explain cultural differences to their children. Furthermore, the parents' understanding of race and religion was so mixed with emotion that they found it difficult to meet their children's social-emotional needs
relative to group membership. They seemed to lack understanding of their own conflicting feelings and demonstrated little realization of their responsibilities for teaching children about cultural differences, values, and attitudes. Both parents and children expressed the greatest amount of hostility toward the black/white relationship.

Bird et al. (1952) found that those children (in grades three through five) who recognized parental prohibitions against associating with black children tended to be more prejudiced against black people than those children who reported that they had not received verbal admonitions. Sons of parents both of whom reported that they were pleased to have their children play with black children were relatively free from racial prejudice. Daughters, however, were only slightly less prejudiced than other girls. In Epstein and Komorita's (1966) study the correlations between children's social distance scores and their perceptions of their parents' social distance suggested that the children learned their misanthropic attitudes at home.

Harris et al. (1950) studied the relationship between children's ethnic attitudes and parental child rearing beliefs. The children were in grades four through six. The authors reported that prejudice in the children appeared to be associated with a complex of parental attitudes involving a) authoritarian control; and b) a lack of tolerance
of children's "annoyance-value." They hypothesized that a parental personality and attitude complex associated with freedom from ethnic prejudice in children would include attitudes of tolerance and good judgement in child rearing.

**CHANGING RACIAL ATTITUDES**

A number of researchers (e.g., Mussen, 1950; Yarrow, Campbell and Yarrow, 1958; Eisenman, 1965) have brought older black and white children together for short periods of equalitarian contact in racially integrated summer camps. In Mussen's study such experience did not lead to significant attitude change. However, this may have been due in part to individual differences in the effects of the camp experience. Yarrow, Campbell, and Yarrow found group contact to produce a reduction in race prejudice in the group as a whole although individual differences played an important part in results. The camp's interracial staff were instructed to act as models and to supply expectations for interracial relations among the children by exhibiting congenial interpersonal relations among counselors and accepting all children as equal.

As Hartup (1970) notes, such contact, by itself, will not always significantly improve interracial attitudes. The Sherif studies (1953; 1961; 1964) emphasize the need for shared norms and cooperative activity in order to reduce tensions. Sherif and his colleagues found that having groups of (white) boys work cooperatively on highly salient problems served to reduce intergroup conflict,
reduced stereotyping in intergroup evaluation, and produced increases in friendship choices across group lines. Fulcher and Perry (1973) found that white Australian 4- to 6-year-olds who cooperated in a game with (nonexistent) black "picture playmates" showed decreased prejudice on a post-test. There were no changes among children who competed against "picture playmates" or who did not play the game.

Weiner and Wright (1973) conducted an experiment in which groups of white third-graders were subjected to arbitrary discrimination. Subsequently children in the experimental groups held fewer prejudiced beliefs and were significantly more likely than were controls to report a desire to attend a picnic with black children.

Several investigators have used the PRAM I or PRAM II procedures to assess the outcome of studies designed to modify racial attitudes in preschool children (The PRAM II can be divided into two short forms for use as pre- and post-test measures). They have reported success with the use of direct behavior modification procedures (e.g., Edwards and Williams, 1970; McMurty and Williams, 1972; Parish et al., 1975). Best et al. (1975) reported some success following operant conditioning. Less dramatic changes have occurred after modification of children's affective responses to the colors white and black (Williams and Edwards, 1969; McAdoo, 1970). McAdoo (1970), Walker (1971), and Best et al. (1975) reported that special curriculum procedures did not change racial attitudes.
THE EFFECTS OF AGE AND PEER MODELS ON RACIAL ATTITUDE

Few studies have dealt with the relationships between age and racial awareness or racial bias. The standardization data for one racial attitude measure (Williams, et al., 1975b) show that the scores for children ranging in age from 3-1 to 7-1 years (mean age was 5-4 years) did not vary systematically with age. Goodman (1952), however, found that even within the narrow age range of her sample (4-1 to 5-3 years) the degree of racial awareness (low, medium, high) was a function of age, with older children displaying higher awareness of racial differences. When they looked at the racial attitude scores of preschoolers and children in grades one through four, Williams, Best, and Boswell (1975a) found a statistically significant trend of increasing racial bias in white children from preschool to the second grade. Bias decreased significantly from second to third grade, and third and fourth graders displayed significantly less bias than first graders.

As was mentioned in the literature review, most of the modeling research with children has involved adult models, and the effects of age differences in peer modeling have not been studied. It has been observed (Parten, 1932) that in nursery school groups the amount of social participation among children is positively correlated with chronological age (r = .61). The older children spend more time in parallel, associative, and cooperative activities. They seek more attention and praise from peers
(Hattwick and Sanders, 1958; Martin, 1964) and less from adults (Heathers, 1955; Martin, 1964). Charlesworth and Hartup (1967) have found that four types of "generalized positive reinforcement" occur more often among four-year-olds than among three-year-olds.

It is reasonable to assume that when children attend school fulltime and spend most of their waking hours, during and after school, among peers the influence of peers on values and behavior will increase. The strength of peer influence on the behavior of preadolescents and adolescents has been a topic of research for many years. In the present study it is hypothesized that the influence of peer modeling will be greater among the second grade children than the preschoolers. It is acknowledged that children are exposed to both modeling and reinforcement by peers. The present study will address aspects of modeling. EFFECT OF SEX OF SUBJECT ON RACIAL ATTITUDE AND IMITATION OF PEERS

Relatively few studies of racial attitudes mention the effect of sex on the degree of racial bias. Some studies have found that girls are more likely to demonstrate racial prejudice (Bird, 1952); more out-group oriented (black girls, in Gregor and McPherson, 1966); or more aware of racial differences (Goodman, 1952) than boys. On the other hand, when the results of the standardization of the Preschool Racial Attitude Measure II were analyzed according to sex, no significant main or interaction effect
of sex was found (Williams, et al., 1975b). In this study it is hypothesized that there will be no significant difference according to sex between mean pretest scores or mean changes in scores at the time of the posttest.

Regarding peer influence, in their review of studies in The Psychology of Sex Differences Maccoby and Jacklin (ed.s, 1974) report that there is considerable evidence that girls (preschool-age or younger) are more likely than boys to comply with an adult's directions. However, in regards to compliance to pressure from age-mates, the situation is different. In none of the six cultures studied by Whiting and Edwards (1974) did girls prove to be significantly more compliant when peers attempted to dominate them. The trend was in this direction for three cultures and in the other direction for two.

One form of compliance to peer pressure is demonstrated by the so-called Asch situation, in which a subject must judge perceptually ambiguous stimuli (e.g., auto-kinetic movement). He must then express his opinion when his own judgements differ considerably from those of a group of peers and all judgements are public. Some subjects adjust their judgements to those of their peers; others do not. The majority of studies show no sex differences in the Asch situation (Maccoby and Jacklin, 1974). When differences are found, it is more often girls and women who are more suggestible, although a few studies show males to be more susceptible to social influence.
Maccoby and Jacklin observe that an individual is more likely to alter his views following a persuasive communication if he is either uninterested or uninformed concerning the issue. Individuals with generally low self-esteem are more persuasable, which the authors note may be only another way of saying that people who believe they are poorly informed about an issue will change their minds readily, whether or not they actually are less well informed. It is reasonable to assume that sex differences in persuasibility and imitation will depend upon the nature of the issue under consideration and how involved and informed each sex is concerning it.

Maccoby and Jacklin have also reviewed the studies of spontaneous imitation. Here again, there appear to be no generalized differences according to sex. The differences which occur are usually related to the nature of the modeled behavior. For example, boys are more likely to imitate aggressive behavior, while girls are more likely to imitate affectionate behavior.

**SUMMARY**

In summary, there is much empirical evidence to indicate that the child's tendency to imitate permits him, by observing others, to learn new behaviors and to modify those he has already acquired. Many writers have theorized that underlying the tendency to imitate is a basic motive "to become like" another. The child does not take on only the isolated behaviors of others; he apparently embraces a
Gestalt of the people with whom he identifies and patterns himself after the overt behaviors, motives, and expectations of these important individuals. The hypothesized motives for a child's reproducing the behaviors of someone else include desires for dependence, nurturance, or power; defense against anxiety or aggression; envy; and a need for secondary reinforcement.

Interest in determining the facilitators of identification and imitation has generated numerous studies of the relationships between the behaviors of adults and children's responses to and reproductions of these behaviors. Many data now exist which indicate that adult models are effective in eliciting and modifying children's behavior in situations involving live and filmed aggression, patterns of self-reinforcement, altruism, conscience development, and sex-role identification. There is evidence that children learn racial attitudes from adult models, especially parents. However, often these attitudes are inconsistent and are not communicated openly or consistently reinforced.

Children imitate peers also and use them as models in daily social interaction. Responsiveness to peers emerges in very early childhood. It increases as children grow and become less dependent on the attentions of adults and more interested in interacting with people their own age. Investigators have successfully used peers as models for aggression, self-reinforcement criteria, altruism, and
the reduction of anxiety.

From this research it has become apparent that many factors affect the extent to which children acquire and reproduce modeled behavior. Some of the factors which have been studied include the emotional relationship between the model and the observer; the social power of the model; the reinforcement history of the observer; attentional processes; cognitive development; and the actual or expected consequences of the modeled behavior.

The foregoing pages have documented the existence of racial awareness, identity, and bias among preschoolers and older children. Racial cleavages which may originate because of in-group norm-sharing and perceived similarity develop fairly quickly into prejudice against members of the out-group (other race). Several researchers have employed semantic differential studies of young adults to demonstrate that the tendency to evaluate the color white more positively than the color black is widespread and cross-cultural. Other investigators have found that some preschoolers do reject other-race children, specifically that white children reject black children. Whether or not the majority of preschoolers do reject other-race children from their peer groups or would if they had interracial contacts, they do demonstrate a tendency to value whiteness and lightness over blackness and darkness. By the ages of three and four years they are developing the race- and color-related value concepts which may be the precursors
of racial prejudice.

If very young children are capable of holding racial biases, it is reasonable to suggest that people who are interested in changing these attitudes should study preschool children in order to see how such changes may be accomplished. A number of researchers have brought older black and white children together for short periods of equalitarian contact in racially integrated summer camps. Sometimes this has led to significant attitude change. Other investigators have reported success with the use (with preschoolers) of direct behavior modification procedures. Special curriculum procedures have not been very successful. Studies on the effects of peer modeling on racial attitudes of young children have not appeared in the literature. Evidence that, by modeling behaviors, young children can influence each other's racial attitudes would have implications for the use of peer models at the preschool and early elementary school level as one means of countering race prejudices.
III. PURPOSE OF THIS STUDY

The purpose of the present study is to 1) investigate the effects of peer models on the racial attitudes of pre-school and second grade children; and 2) examine some of the factors which foster or impede the imitation of peers. Specifically, the following questions are asked:

1. When white children who express a pro-Caucasian/anti-Negro bias are exposed to peers who model a pro-Negro bias, will they later show fewer pro-Caucasian responses and more pro-Negro responses? In other words, can peer modeling effect a reduction in racial bias?

2. Does a child's age systematically affect the degree of racial bias he holds or how readily he may change his attitudes in response to a peer's behavior? Specifically, are second grade children more or less racially biased than pre-school children? Are they more influenced by peer models (on the issue of racial attitudes) than are the younger children?

3. Are there systematic differences in degree of racial bias according to a child's sex? Are girls more or less likely than boys to demonstrate a reduction in pro-Caucasian/anti-Negro bias after having observed a same-sex peer demonstrate a pro-Negro bias?
4. Is there a systematic relationship between a child's history of reinforcement by peers (popularity) and the extent to which he will imitate the pro-Negro bias of a same-sex peer?

5. Is there a systematic relationship between a model's previous interactions with the observer (rewarding-ness) and the extent to which his behavior will be reproduced by the latter?
IV. HYPOTHESES

RACIAL ATTITUDE: The following hypotheses about racial attitude will be tested:

1. On the pretest the percentage of children who exhibit probable or definite pro-Caucasian/anti-Negro bias will be significantly greater than chance.

2. No significant difference according to sex of the subject will be demonstrated between mean racial attitude scores on the pretest.

3. There will be no significant difference between mean pretest scores of preschool and second grade children.

PEER MODELING: The following hypotheses about the effects of peer modeling will be tested:

4. There will be a significant difference between the mean change in post- versus pretest scores according to the treatment group in which the subject is placed.

   a) The racial attitude scores of children who are exposed to a peer model demonstrating a pro-Negro bias (experimental group) will show a greater mean post-versus pretest change than will the scores of children who are not exposed to a peer model (control group).

   b) The scores of popular children who are exposed to rewarding peer models with a pro-Negro bias
will show a greater mean post- versus pretest (reduction) change than will the scores of popular children exposed to non-rewarding models with a pro-Negro bias.

c) The scores of nonpopular children who are exposed to nonrewarding peer models will show a greater mean change (reduction) between pre- and posttest scores than will the scores of nonpopular children who are exposed to rewarding models.

5. There will be a significant difference between the mean changes in scores of second grade children and preschool children in all experimental groups. The scores of the older children will show a greater mean change.

6. There will be no difference in the influence of peer models according to the sex of the subject. Thus, there will be no systematic difference between the mean changes in racial attitude scores according to the sex of the subject.
CHAPTER TWO

METHODS

I. SUBJECTS

Subjects in the study were chosen from second grade classrooms at three elementary schools and from six preschools. All but 9 of the 114 children eventually included were residents of West Carrollton, Ohio, a small city on the outskirts of Dayton, Ohio. The remaining 9 (all preschoolers) were residents of Kansas City, Kansas. Fifty-five were preschoolers (27 girls and 28 boys) and 59 were second-graders (30 girls and 29 boys). The preschoolers ranged in age from 3-8 to 6-4 years, with a mean age of 5-0 years in the experimental group and 5-2 years in the control group (see Table 3). The second-graders ranged in age from 7-5 to 9-5 years, with a mean age of 8-3 years in the experimental group and 8-4 years in the control group.

The children included in this study were Caucasian. The schools in which the author was given permission to conduct research were attended mostly by white children. There were far too few nonwhites to fill the cells of the experimental design. Since racial attitude scores vary systematically with race of the subject (Williams, Best, and Boswell, 1975; Williams, et al., 1975b), the nonwhite
children were excluded from the study.

The subjects in the present study are of roughly the same socioeconomic status. The superintendent of schools at West Carrollton, Ohio, characterized the socioeconomic status of families in his school system as lower middle class and working class. The preschoolers studied in Kansas City, Kansas, were in preschools attended by children of working class parents.

Investigators of peer modeling have generally used children in one classroom or school and have not compared the effects of peer modeling on children of various socioeconomic statuses. Scores on measures of racial attitudes of young children have not been shown to vary systematically with socioeconomic status (Williams, et al., 1975b) or with intelligence as measured by the Peabody Picture Vocabulary Test (Williams et al., 1975b). Gough et al., (1950) did find that among older children (fourth-, fifth-, and sixth-graders), lower class status was related to higher anti-Semitism scores.
**TABLE 3**

**MEAN AGES OF SUBJECTS (IN YEARS)**

<table>
<thead>
<tr>
<th>Preschoolers</th>
<th>Girls</th>
<th>Boys</th>
<th>Both Sexes</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exper GP</strong></td>
<td>5-0 n=22*</td>
<td>5-0 n=19</td>
<td>5-0 n=41</td>
<td>3-8 to 6-4</td>
</tr>
<tr>
<td><strong>Control GP</strong></td>
<td>4-9 n=6</td>
<td>5-4 n=5</td>
<td>5-2 n=11</td>
<td>4-0 to 6-2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second-Graders</th>
<th>Exper GP</th>
<th>Boys</th>
<th>Both Sexes</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exper GP</strong></td>
<td>8-3 n=19</td>
<td>8-3 n=41</td>
<td>8-3 n=41</td>
<td>7-5 to 9-4</td>
</tr>
<tr>
<td><strong>Control GP</strong></td>
<td>8-5 n=6</td>
<td>8-2 n=6</td>
<td>8-4 n=12</td>
<td>7-9 to 9-0</td>
</tr>
</tbody>
</table>

*Ages were recorded for fifty-three preschoolers and fifty-two second-graders.*
II. MEASURES

A. RACIAL ATTITUDE: PRAM II

The instrument used to assess racial attitudes was the Preschool Racial Attitude Measure II (PRAM II; Williams, et al., 1975). This measure has been demonstrated to be appropriate to the test-taking abilities of both preschoolers and children in the first four grades of elementary school. The PRAM II consists of twenty-four items. It can be divided into two equivalent twelve-item short forms, Series A and Series B, and was for the purposes of this study. Each series constituted either a pre- or posttest.

A series consists of twelve color photographs and twelve associated stories. Each photograph depicts drawings of two dark-haired human figures which are identical in all respects except that one has a pinkish-tan skin color while the other has medium-brown skin color. The following is a sample story (Two young boys are pictured): "Here are two little boys. One of them is a kind little boy. Once he saw a kitten fall into a lake, and he picked the kitten up to save it from drowning. Which is the kind little boy?" (A copy of the stories is included in Appendix B.) In each series there are six stories which contain positive evaluative adjectives (e.g., good, nice,
happy) and six stories which contain negative evaluative adjectives (e.g., bad, naughty, sad). A child indicates his racial attitudes by selecting one of the figures in response to a story containing one of the adjectives.

Also included in the PRAM II are filler items consisting of photographs each of which depicts a drawing of a male and a female human figure who have the same skin color. The stories which accompany them concern the assignment of traditional sex roles, for example playing football or buying dresses.

SCORING THE PRAM II

Due to the two-choice nature of the PRAM II procedure, the binomial distribution provides a convenient way to determine when an individual child is responding in a manner which would be unlikely on a chance basis. With 24 response opportunities, the probability of an unbiased child obtaining a score of 17 or more is .035; the same probability exists for scores of 7 or less. Scores in the former category (≥ 17) are assumed to indicate a "definite" pro-Caucasian/anti-Negro bias (C+/N-), while scores in the latter category (≤ 7) reflect a "definite" pro-Negro/anti-Caucasian bias (N+/C-). In a like manner, scores of 15, 16, 8, and 9 are assumed to indicate "probable" bias, while scores in the 10-14 range are seen as "unbiased." (Williams, et al., 1975b). Table 4 portrays the bias categories and change expectancies of a child's obtaining a score in any of them.
### Table 4

Bias Categories and Chance Expectancies of a Child's Obtaining a Score in Any of Them

<table>
<thead>
<tr>
<th>PRAM II Score Range</th>
<th>Category</th>
<th>Chance Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-7</td>
<td>Definite N+/C- Bias</td>
<td>3.3%</td>
</tr>
<tr>
<td>8-9</td>
<td>Probable N+/C- Bias</td>
<td>12.1%</td>
</tr>
<tr>
<td>10-14</td>
<td>Non-Biased</td>
<td>69.2%</td>
</tr>
<tr>
<td>15-16</td>
<td>Probable C+/N- Bias</td>
<td>12.1%</td>
</tr>
<tr>
<td>17-24</td>
<td>Definite C+/N- Bias</td>
<td>3.3%</td>
</tr>
</tbody>
</table>
Since in this study only half of the 24 PRAM II items were administered for the pretest, the scores in each bias category were divided by 2 (The PRAM II norms indicate that children obtain approximately equal scores on each half of the measure). A binomial distribution for 12-trial cases was generated (Hays, 1973), and Table 6 shows the expected and actual percentages of scores in each category.

VALIDITY OF PRESCHOOL RACIAL ATTITUDE MEASURE

The main strength of the PRAM as far as construct validity is concerned is the fact that it is derived from the evaluative dimension of the semantic differential. The rationale of the method had its origins in the findings of Osgood and his associates that the evaluation (E) scores from semantic differential ratings by adults were highly correlated with scores which they made on traditional attitude tests (Osgood, et al., 1957, pp 194-5). Since many of the evaluative adjectives employed with the semantic differential were simple words which were found in the vocabulary of the preschool child, the authors of the PRAM reasoned that a child's tendency to associate evaluative adjectives with certain stimulus characteristics in pictures could provide a useful method of assessing attitudes in preliterate children.

Williams (1966) conducted a study which compared the connotative meanings of triads of color-linked concepts consisting of 1) color names (e.g., black), 2) color-
person concepts (e.g., black person); 3) ethnic concepts (e.g., Negro). He found that among Caucasian subjects color-linked concepts were more similar in meaning than were non-color-linked concepts. The subjects' evaluative connotations of ethnic concepts were predictable from associative color names. The findings were interpreted as indicating that the color-coding of racial groups is related to the perception of these groups and the favorability of attitudes toward them.

McMurty and Williams (1972), studied the evaluation dimension of the affective meaning system of preschool children. In their study positive evaluative adjectives and negative evaluative adjectives were shown to have a mutually exclusive relationship. This would be required if the adjectives are to be conceptualized as occupying ends of an evaluative dimension.

Filler and Williams (1970) found evaluative ratings of human figures to fall in the same rank order as the color names with which they were associated (white, black, red, yellow, brown, blue). The findings were interpreted as consistent with the view that the designation of persons by color names may be one determinant of attitudes toward them. Williams (1969), found evaluative scores for the word "black" to be significantly correlated with scores on each of four attitude measures (of attitudes toward Negro persons): 1) Likert-type scale; 2) social distance scale; 3) semantic differential evaluative scores for the
word Negro; 4) Woodmansee and Cook's 1957 scale of attitudes toward Negro persons. Williams found significant correlations with evaluative scores for the color name "brown" for three of the four measures. Non-significant correlations were found between evaluative scores for the color names white, red, and yellow and the four attitude measures.

Boswell and Williams (1975) found an appreciable degree of correspondence between preschool children's scores on the PRAM and their mothers' attitudes toward black persons. Mabe and Williams (1975) found a correlation coefficient of .52 between the degree of pro-Euro/anti-Afro bias displayed on PRAM II and the frequency of sociometric choice of Euro-American associates.

B. SOCIOMETRIC MEANS

The initial step in the assignment of subjects was the measurement of the relative popularity of each child in the classroom. For this purpose the investigator employed a modification of sociogram procedures described by Dunnington (1957) and McCandless & Marshall (1957).

Investigating the reliability of such a sociometric measure, Dunnington found that 1) preschool subjects were able to verbalize preferences among their peers; 2) individual statements of preferences changed over time but membership within status groups remained identical from test to retest. In her study the rank order coefficient of correlation between the original test and retest was
.86. McCandless and Marshall found children's socio-
metric scores to be stable over 10- to 30-day intervals.
For the preschoolers the procedure was as follows:

A black- and-white photograph was taken of each
child. The photographs were tacked to a bulletin board,
and each child was individually instructed to, "Point to
the person you like to play with the most." When he/she
had responded, he/she was asked, "Who else do you like to
play with a lot.... Who else?" The first person chosen
was assigned a number 1; the second a 2; and the third a
3. Then the child was instructed, "Point to the person
you don't like much or hardly ever play with." The child
to whom he pointed first received a -1, and the next two
received a -2 and -3 respectively. Then the examiner
instructed, "I am going to point to the rest of the
pictures, and I want you to say whether you like to play
with each person or not." A child received a + or -
according to whether the subject said he liked to play
with the child or not.

A weighted score was determined for the first three
choices and rejections in the following manner: the score
for the child chosen or rejected first was determined by
subtracting 1 from the number of children whose pictures
were shown to the subject (n-1). For example if there were
13 children in a given classroom, the child chosen first
by the subject had one out of twelve chances of being
named first. Thus, each time he was named first he
received a weighted score of 12. If rejected first, he received a score of -12. A child chosen second received a weighted score of one-half of (n-1), in this case 6; and the child named third received a weighted score of one-third of (n-1), in this case 4. The remaining pluses and minuses were given weights of 1 and -1 respectively. The positive and negative points received by each child were summed, giving him a single score.
III. ASSIGNMENT OF SUBJECTS

The children were divided into two groups according to sex, and within each group the scores were rank ordered. Those whose scores were above the median were designated Popular, and those whose scores were below the median were designated Nonpopular. Second-graders were assigned to groups in the same manner except that photographs were not taken of them. Instead, each child was shown and read a list of names of the children in his classroom.

The children in each of the two popularity groups were then assigned to model conditions: rewarding peer model (RM) or non-rewarding peer model (NRM). The sociogram record of each subject was searched for a like-sex peer who was chosen or rejected first, second, or third. Providing there was an available match, the children were randomly assigned to either of the two model conditions. As Hartup (1970) and Maccoby and Jacklin (1974) have noted, peer groups of young children often show cleavages by sex. Frequently children in this study chose like-sex peers and rejected opposite-sex peers, and in such instances no children could be assigned to the Nonrewarding Model (NRM) condition.

A testing sequence was established to permit all the available children to serve as subjects. Some of the children participated only as experimental subjects;
others, who were designated models, participated first as experimental or control subjects and then were trained to serve as models during subsequent sessions (not more than two for any child). The reluctance of teachers to allow children to leave the classroom for any length of time militated against the training of children to be models for several peers.
IV. TEST PROCEDURES

Each subject was seen individually (and with one other child during the modeling session) in a private room separate from his classroom. The subject sat at a desk or table and faced the examiner. One (female) examiner administered all the tests. When seated, the subject was shown some of the PRAM II pictures and told, "What I have here are some pictures I'd like to show you. There is a story that goes with each picture. When I read the story, I want you to point to the person that you think the story is about. There aren't any right or wrong answers. I want you to choose the person you think goes with the story. Here, I'll show you what I mean..."

The child was then shown a series of sixteen pictures. Six were accompanied by stories containing positive adjectives; six were accompanied by stories containing negative adjectives; and four were filler items concerning sex roles. The child was asked to respond to each story by pointing to either of the pictured human figures.

Each time a child assigned a positive evaluative adjective to a light-skinned figure or a negative evaluative adjective to a dark-skinned figure, he was given one point. If he did the opposite, he received no point. At the end of the series the points were summed, with a score of 12

63
points indicating that the child had assigned all positive evaluative adjectives to the light-skinned figures and all negative evaluative adjectives to dark-skinned figures. A score of 0 indicated that the child had done the opposite.

If a child obtained a score of seven or more on the first series of twelve picture-stories, he was instructed to remain in his seat while a same-sex peer responded to a series of picture-stories. The subject was told, "You can watch [the peer] do some pictures, and then you can do some more." The peer had been briefed to respond to each story by pointing to the figure which was closer to where the examiner placed her hand as she read the story. Since it was felt that it would be unethical to train children to assign negative adjectives to either dark- or light-skinned figures, twelve stories with only positive evaluative adjectives were used during the modeling sequence. The examiner always placed her hand closer to the dark-skinned figure than to the light-skinned figure. Thus, in assigning positive evaluative adjectives to dark-skinned figures, the peer modeled a bias contrary to the subject's.

When the peer had completed the series, he/she was thanked for his help and he left the room. The subject was then instructed, "All right, now I would like you to do some more pictures yourself." He was then administered a second series of picture-stories. The pictures shown to him were the same as those shown to the peer; however, the stories included positive and negative evaluative
adjectives. When he had completed the posttest, the subject was thanked and instructed, "Please don't tell anyone about what we've done here until everyone has had his turn. That way it will be a surprise to everybody."

It was hoped that this would lessen the possibility of future subjects' being prejudiced by prior knowledge of the test materials and procedures. The control subjects were given the pre- and posttests but were not exposed to a peer model.

ORDER IN WHICH SUBTESTS WERE ADMINISTERED

The standardization of the PRAM II demonstrated that children obtain approximately equal scores on each half of the test (Series A and B). As a precaution, since the change in score from pre- to posttest is an important variable in this study, approximately half of the subjects in each cell were given Series A and half were admin-istered Series B.
V. EXPERIMENTAL DESIGN

The experimental design consisted of the following groups:

- Popular Children (P) \( n=45 \)
- Rewarding (Liked) Peer Model (P-RM) \( n=24 \)
- Nonrewarding Peer Model (P-NRM) \( n=21 \)
- Nonpopular Children (NP) \( n=45 \)
- Rewarding Peer Model (NP-RM) \( n=23 \)
- Nonrewarding Peer Model (NP-NRM) \( n=22 \)
- No Model, Control (C) \( n=24 \)

Total \( N=114 \)

STATISTICAL DESIGN

In a 2x2x2x2x2 plus one factorial design the following five variables were manipulated: 1) sex of the subject; 2) grade level of the subject (preschool versus second grade); 3) popularity of the subject (popular versus non-popular); 4) rewardingness of peer model (rewarding versus nonrewarding; and 5) order in which subtests were administered (Subtest A followed by Subtest B or vice versa). Table 5 illustrates the distribution of subjects in each cell of the design.

The data were analyzed with the use of a BMD P 2V analysis of variance program (Biomedical Computer Programs, Manual Date 1975; Program revised August, 1976), according
<table>
<thead>
<tr>
<th></th>
<th>P-RM</th>
<th>P-NRM</th>
<th>NP-RM</th>
<th>NP-NRM</th>
<th>C</th>
<th>n of Exp gp</th>
</tr>
</thead>
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<tr>
<td><strong>PRESCHOOLERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Order AB</td>
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<td>n=1</td>
<td>n=3</td>
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<td></td>
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<td><strong>BOYS</strong></td>
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</tr>
<tr>
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<td>n=21</td>
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<td>n=22</td>
<td>n=24</td>
<td></td>
</tr>
</tbody>
</table>
to Winer's (1971) procedure for examining a factorial
design with a comparison control group.
CHAPTER THREE

RESULTS

I. PRETEST SCORES

On the 24-item PRAM II a score must be 15 or greater in order to fall in the "probable" or "definite" bias categories. Since 12 items were administered for the pretest, in this case the ranges of scores in each category were divided by 2 (see Table 6). In this instance a score of 8 or higher is considered to reflect probable or definite pro-Caucasian/anti-Negro (C+/N-) bias, while a score of 7 falls at the upper end of the non-biased range.

Since one objective of this study is to explore the effects of a peer's modeling (pro-Negro bias) on a subject who has exhibited a pro-Caucasian/anti-Negro bias, an attempt was made to include in the experimental and control groups only those subjects who obtained a pretest score of 8 or more. However, filling each cell in the experimental design proved to be very difficult. As noted in the "Assignment of Subjects" section, children frequently chose like-sex peers on the sociometric measure and rejected opposite-sex peers. In other words, they saw only opposite-sex peers as nonrewarding. Since
all models were to be same-sex peers, this made filling
the Popular-Nonrewarding Model (P-NRM) and Nonpopular-
Nonrewarding Model (NP-NRM) cells rather difficult.
Eventually 6 (out of a total of 55) preschoolers and 3
(of 59) second graders with pretest scores of 7 were
included in the experimental group.

HYPOTHESIS #1: On the pretest the percentage of
children who exhibit probable or definite pro-Caucasian/
anti-Negro bias will be significantly greater than chance.
This hypothesis is confirmed. The figures in Table 6 make
it obvious that, as in previous studies, pro-Caucasian/
anti-Negro (C+/N-) bias is much more evident than 1)
would be hypothesized according to change; and 2) is the
reverse pro-Negro/anti-Caucasian bias. The children in
this study demonstrate a high degree of definite C+/N-
bias. While the percentage of scores expected to fall
into this category by chance is 7.3%, the percentages of
scores which actually fall into the category range from
40.0% to 54.2%. From 60.0% to 71.3% of the children
score in the probable or definite C+/N- bias categories,
while only 19.4% would be expected by chance. Since the
differences between expected and actual percentages were
so great numerically, they were not tested statistically.

HYPOTHESIS #2: No significant difference according
to sex of the subject will be demonstrated between mean
racial attitude scores on the pretest. This hypothesis is
confirmed.
<table>
<thead>
<tr>
<th>PRAM II SCORE RANGE</th>
<th>CATEGORY</th>
<th>PRESCHOOL SUBJECTS</th>
<th>SECOND GRADE SUBJECTS</th>
<th>CHANGE EXPECTANCY</th>
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<tr>
<td></td>
<td></td>
<td>GIRLS</td>
<td>BOYS</td>
<td>GIRLS</td>
</tr>
<tr>
<td>0-3</td>
<td>Definite N+/C- Bias</td>
<td>0.0</td>
<td>0.0</td>
<td>4.3</td>
</tr>
<tr>
<td>4</td>
<td>Probable N+/C- Bias</td>
<td>5.7</td>
<td>7.1</td>
<td>8.7</td>
</tr>
<tr>
<td>5-7</td>
<td>Non-Biased</td>
<td>17.1</td>
<td>33.3</td>
<td>26.1</td>
</tr>
<tr>
<td>8</td>
<td>Probable C+/N- Bias</td>
<td>17.1</td>
<td>9.5</td>
<td>13.0</td>
</tr>
<tr>
<td>9-12</td>
<td>Definite C+/N- Bias</td>
<td>54.2</td>
<td>50.0</td>
<td>47.8</td>
</tr>
</tbody>
</table>

N 35 42 47 45
HYPOTHESIS #3: There will be no significant
difference between mean pretest scores of preschool and
second grade children. This hypothesis is confirmed.

The mean pretest scores are displayed in Table 7
and broken down according to sex, age, and subtest. When
the low scores (non-biased or pro-Negro/anti-Caucasian
categories) are combined with the scores of the exper-
imental and control groups, the overall mean score is
highest for preschool girls (9.1 as compared with 7.8
for preschool boys; 8.2 for second grade girls; and 8.0 for
second grade boys). However, relatively few preschool
girls (4) scored below 8, and when the experimental groups
are considered by themselves, the one group of children
whose mean score is different from those of the other
groups are the preschool boys. An analysis of variance
performed on the experimental group pretest scores reveals
no significant main effect of sex and a Sex x Grade inter-
action effect that is not statistically significant
(p < .057). However, this does suggest a tendency for
girls and older children to be more biased (C+/N-) than
preschool boys. When the control group subjects are
included in the analysis, the effect does not approach
significance (p < .2).

The analysis of the pretest scores also reveals an
unexpected significant main effect of the subtest
(p < .03). Subjects who took Subtest A obtained signifi-
cantly higher scores than those who took Subtest B. The
<table>
<thead>
<tr>
<th></th>
<th>Subtest</th>
<th>GIRLS Mean</th>
<th>BOYS Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(n=1)</td>
<td>(n=3)</td>
</tr>
<tr>
<td>PRESCOLLERS</td>
<td>A</td>
<td>4.0</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>5.0</td>
<td>4.7</td>
</tr>
<tr>
<td>LOW SCORERS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>9.9</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>9.4</td>
<td>8.3</td>
</tr>
<tr>
<td>EXPER GP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>A</td>
<td>9.7</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>9.0</td>
<td>10.3</td>
</tr>
<tr>
<td>EXPER GP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>A and B</td>
<td>9.8</td>
<td>8.6</td>
</tr>
<tr>
<td></td>
<td>A and B</td>
<td>9.5</td>
<td>9.5</td>
</tr>
<tr>
<td>ALL GROUPS</td>
<td>A and B</td>
<td>9.1</td>
<td>7.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Subtest</th>
<th>GIRLS Mean</th>
<th>BOYS Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(n=8)</td>
<td>(n=7)</td>
</tr>
<tr>
<td>SECOND GRADERS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOW SCORERS</td>
<td>A</td>
<td>4.6</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>5.4</td>
<td>5.9</td>
</tr>
<tr>
<td>EXPER GP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>A</td>
<td>10.3</td>
<td>10.4</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>9.2</td>
<td>8.7</td>
</tr>
<tr>
<td>EXPER GP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>A</td>
<td>10.2</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>11.0</td>
<td>8.0</td>
</tr>
<tr>
<td>EXPER GP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>A and B</td>
<td>9.9</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td>A and B</td>
<td>10.5</td>
<td>9.0</td>
</tr>
<tr>
<td>ALL GROUPS</td>
<td>A and B</td>
<td>8.2</td>
<td>8.0</td>
</tr>
</tbody>
</table>
effect is more pronounced among second-graders than preschoolers (see Table 8).

TABLE 8

MEAN SCORES ON PRETEST GROUPED ACCORDING TO SUBTEST TAKEN

<table>
<thead>
<tr>
<th>SUBTEST</th>
<th>PRESCHOOL</th>
<th></th>
<th>SECOND</th>
<th>GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GIRLS</td>
<td>BOYS</td>
<td>GIRLS</td>
<td>BOYS</td>
</tr>
<tr>
<td>EXPERIMENTAL</td>
<td>A</td>
<td>9.9</td>
<td>9.0</td>
<td>10.3</td>
</tr>
<tr>
<td>GROUP</td>
<td>B</td>
<td>9.4</td>
<td>8.3</td>
<td>9.2</td>
</tr>
<tr>
<td>DIFFERENCE</td>
<td>A</td>
<td>0.5</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td>(A-B)</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTROL</td>
<td>A</td>
<td>9.7</td>
<td>8.7</td>
<td>10.2</td>
</tr>
<tr>
<td>GROUP</td>
<td>B</td>
<td>9.0</td>
<td>10.3</td>
<td>11.0</td>
</tr>
<tr>
<td>DIFFERENCE</td>
<td>A</td>
<td>0.7</td>
<td>-1.6</td>
<td>-0.8</td>
</tr>
<tr>
<td>(A-B)</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the pretest there are no significant main or interaction effects according to the popularity of the subject, and there are no significant differences between the scores of children who will be exposed to rewarding versus nonrewarding models (see Appendix C).
II. ANALYSES OF PRETEST VERSUS POSTTEST SCORES

ANALYSIS ACCORDING TO TREATMENT GROUPS

HYPOTHESIS #4: There will be a significant difference between the mean charges in pretest-versus-posttest scores according to the treatment group in which the subject is placed.

a) The racial attitude scores of children who are exposed to a peer model demonstrating a pro-Negro bias (experimental group) will show a greater mean pretest-versus-posttest change than will the scores of children who are not exposed to a peer model (control group). This hypothesis is confirmed.

The mean scores on the pretest and posttest and the mean differences between the scores on the two tests are displayed in Table 9. When the posttest scores on the racial attitude measure are compared with the scores on the pretest, the difference between the change in scores among experimental subjects and control subjects is significant at the p < .004 level. The children in the experimental group obtained lower scores on the posttest, while the scores of the children in the control group remained essentially the same. The results are displayed in Table 10. These results indicate that the effect of the modeling sequence on a child's choices on the racial
TABLE 9
MEAN SCORES ON PRETEST AND POSTTEST AND MEAN DIFFERENCES BETWEEN SCORES ON THE TWO TESTS

<table>
<thead>
<tr>
<th></th>
<th>PRESCHOOLERS</th>
<th></th>
<th>GIRLS</th>
<th></th>
<th>BOYS</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ORDER OF TESTS</td>
<td>PRE-TEST</td>
<td>POST-TEST</td>
<td>DIFF</td>
<td>PRE-TEST</td>
<td>POST-TEST</td>
<td>DIFF</td>
</tr>
<tr>
<td>EXPER GP</td>
<td>AB</td>
<td>9.9</td>
<td>5.4</td>
<td>4.5</td>
<td>9.0</td>
<td>7.9</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>BA</td>
<td>9.4</td>
<td>6.4</td>
<td>3.0</td>
<td>8.3</td>
<td>6.8</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>AB and BA</td>
<td>9.8</td>
<td>5.8</td>
<td>4.0</td>
<td>8.6</td>
<td>7.2</td>
<td>1.4</td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>AB</td>
<td>9.7</td>
<td>9.5</td>
<td>0.2</td>
<td>8.7</td>
<td>9.0</td>
<td>-0.3</td>
</tr>
<tr>
<td></td>
<td>BA</td>
<td>9.0</td>
<td>7.0</td>
<td>2.0</td>
<td>10.3</td>
<td>8.0</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>AB and BA</td>
<td>9.5</td>
<td>8.7</td>
<td>0.8</td>
<td>9.5</td>
<td>8.5</td>
<td>1.0</td>
</tr>
<tr>
<td>SECOND GRADERS</td>
<td>EXPER GP</td>
<td>AB</td>
<td>10.3</td>
<td>5.7</td>
<td>4.6</td>
<td>10.4</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td>BA</td>
<td>9.2</td>
<td>5.5</td>
<td>3.7</td>
<td>8.7</td>
<td>6.9</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>AB and BA</td>
<td>9.9</td>
<td>5.6</td>
<td>4.2</td>
<td>9.6</td>
<td>7.1</td>
<td>2.5</td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>AB</td>
<td>10.2</td>
<td>9.0</td>
<td>1.2</td>
<td>10.0</td>
<td>9.3</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>BA</td>
<td>11.0</td>
<td>11.5</td>
<td>-0.5</td>
<td>8.0</td>
<td>6.7</td>
<td>1.3</td>
</tr>
<tr>
<td></td>
<td>AB and BA</td>
<td>10.5</td>
<td>9.8</td>
<td>0.7</td>
<td>9.0</td>
<td>8.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>
TABLE 10
MEAN DIFFERENCES BETWEEN PRETEST AND POSTTEST SCORES*

<table>
<thead>
<tr>
<th></th>
<th>GIRLS</th>
<th></th>
<th>BOYS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRESCHOOL</td>
<td>SECOND GRADE</td>
<td>PRESCHOOL</td>
<td>SECOND GRADE</td>
</tr>
<tr>
<td>EXPER GP</td>
<td>4.0</td>
<td>4.2</td>
<td>1.4</td>
<td>2.5</td>
</tr>
<tr>
<td>CONTROL GP</td>
<td>0.8</td>
<td>0.7</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*The difference between experimental and control group means is significant at the p = .004 level (MS = 84.0; MSerr = 9.74; F(1,74) = 8.63).

attitude measure is fairly strong. Those who have been exposed to a peer model who demonstrates a pro-Negro bias are more likely to assign positive evaluative adjectives to dark-skinned figures and negative evaluative adjectives to light-skinned figures than are those children who have not been exposed to a model.

b) The scores of popular children who are exposed to rewarding models will show a greater mean posttest-versus-pretest change than will the scores of popular children who are exposed to nonrewarding models. This hypothesis is rejected. The scores for the preschool subjects show a non-significant trend in this direction; among the second-graders the mean difference in scores is slight.
c) The scores of nonpopular children who are exposed to nonrewarding peer models will show a greater mean change between pretest and posttest scores than will the scores of nonpopular children who are exposed to rewarding models. This hypothesis is rejected. The scores of the pre-school subjects show a nonsignificant trend in this direction. For the second-graders the reverse is true.

The analysis of pretest versus posttest scores according treatment group reveals a statistically significant main effect of Treatment \((p < .05)\) and a significant Grade x Treatment interaction effect \((p < .03); \text{ see Table 11}\). Among the popular preschoolers there is a greater mean change in racial attitude score for children exposed to a rewarding model (P-RM group) than for those exposed to a nonrewarding one (P-NRM. Means are 2.8 and 1.4, respectively).

**TABLE 11**

<table>
<thead>
<tr>
<th>GRADE</th>
<th>TREATMENT GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P-RM</td>
</tr>
<tr>
<td>PRESCHOOL</td>
<td>2.8</td>
</tr>
<tr>
<td>SECOND GRADE</td>
<td>4.9</td>
</tr>
</tbody>
</table>

*The Grade x Treatment interaction effect is significant at a \(p = .03\) level \((\text{MS} = 28.1, 9.7; \text{F}(4, 74) = 2.89)\).*
Among both male and female preschoolers the largest mean change in racial attitude scores (2.6 for boys and 5.0 for girls) is seen among the children in the NP-NRM treatment group (nonpopular children exposed to a non-rewarding model). This suggests that at the preschool level, whereas popular children will imitate rewarding peers more than they will nonrewarding peers, the nonpopular children are more likely to imitate nonrewarding peers than rewarding peers. The least amount of change in pretest-versus-posttest scores occurs among popular children who are exposed to nonrewarding models. A post hoc statistical test, Newman Keul's procedure for multiple comparisons, was employed to determine the statistical significance of the differences between individual pairs of means. It was found that the differences between means that are described above are not significant at the .05 level. The lack of significance may be due in part to the small n's (10-12 per cell) and the fairly large mean square error (11.2).

The results are somewhat different for the older children in the study. Among the second-graders the scores of children in the NP-NRM treatment group change not more, but less, than those of subjects in the other treatment groups. The mean change for girls in this group is 2.8; for boys, 0.0. The nonpopular children are more likely to imitate a rewarding model than a nonrewarding one. The treatment group which shows the greatest mean
change in scores is the P-RM (popular child, rewarding model) group. The mean change is 4.9 for girls and boys together; 3.8 for girls; 6.0 for boys. The popular second-graders, whether exposed to rewarding or non-rewarding models, are more likely to imitate their peers than are the nonpopular children. In addition, both the popular and nonpopular children are more likely to imitate rewarding models than nonrewarding models.

HYPOTHESIS #5: There will be a significant difference between the mean changes in scores of second grade children and preschool children. The scores of the older children will show a greater mean change. This hypothesis is confirmed in the case of popular children but rejected in the case of nonpopular children.

The analysis of variance reveals no significant main effect of Grade. Within two of the four experimental treatment groups, those which include popular children, the mean change in score for second-graders is greater than that for preschoolers (see Table 11). Within the P-NRM treatment group this difference in means is statistically significant at the .05 level.\(^1\) When the popular children are grouped together (both P-RM and P-NRM treatment groups), the mean difference according to grade is

\(^1\)Although Newman Keul's test is a conservative one, caution must be used in making generalizations from findings which are significant at the .05 level because of the likelihood of Type I errors on post hoc multiple comparisons tests.
significant at the .01 level. In the NP-RM group the means are equal, and in the NP-NRM group the mean change is less for the second-graders (though not significantly so) than for the preschoolers. These results suggest that among popular children the older subjects are more influenced by peer models than are the younger ones. This trend does not stand for the nonpopular children, however.

HYPOTHESIS #6: There will be no difference in the influence of a peer model according to the sex of the subject. Thus, there will be no systematic difference between the mean changes in scores according to sex. This hypothesis is rejected.

Analyses of variance of the mean differences between pretest and posttest scores of the experimental group subjects reveal a significant main effect of Sex (p.< .002) and a Sex x Order x Popularity interaction effect which is significant at the .005 level. The mean difference between pretest and posttest scores is greater among girls than boys (4.0 for preschool girls; 4.2 for second grade girls; 1.4 for preschool boys; 2.5 for second grade boys). In addition, the greatest mean changes in scores among popular girls occur in the case in which the girls have taken the subtests in the order AB (see Table 12 and Figures 1 and 2). The scores of nonpopular girls reflect a greater change when the subjects have taken the subtests in BA order.
TABLE 12
MEAN DIFFERENCES BETWEEN PRETEST AND POSTTEST SCORES, ACCORDING TO SEX, ORDER IN WHICH SUBTESTS WERE GIVEN, AND POPULARITY OF SUBJECT*

<table>
<thead>
<tr>
<th>SEX</th>
<th>ORDER</th>
<th>POPULAR</th>
<th>NONPOPULAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIRLS</td>
<td>AB</td>
<td>5.4</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td>BA</td>
<td>2.2</td>
<td>4.7</td>
</tr>
<tr>
<td>BOYS</td>
<td>AB</td>
<td>2.1</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>BA</td>
<td>3.2</td>
<td>0.3</td>
</tr>
</tbody>
</table>

*The Sex x Order x Popularity interaction effect is significant at the p = .005 level (MS = 95.3, 11.2; F(1, 58) = 8.48).

Figure la illustrates the fact that popular girls demonstrate a greater effect of modeling when they have been given Subtest A as a pretest and Subtest B as a post-test than when they have been given the subtests in BA order. The post hoc statistical test reveals that the difference between the two means is significant at the .05 level. For nonpopular girls the opposite is true; however, the effect of subtest order is not as great for them and does not reach a .05 level of significance.

The scores of the boys show a trend that is the reverse of that for the girls. Figure 1b shows that for
FIGURE 1

MEAN DIFFERENCES BETWEEN PRETEST AND POSTTEST SCORES ACCORDING TO SEX, ORDER IN WHICH SUBTESTS WERE GIVEN, AND POPULARITY OF SUBJECT
popular boys the change in score tends to be greater when the subjects are given Subtest B as the pretest and Subtest A as the posttest. The difference between the two means is not statistically significant, however. For nonpopular boys the opposite is true: as do the popular girls, they show a greater mean change in score when they are given the tests in AB order. Here the difference between the two means approaches significance at the .05 level. The boys demonstrate no change in score (no modeling effect) when they are administered the tests in BA order.

Figure 2a illustrates the fact that when the subtests are given in AB order, there is no significant Sex x Popularity interaction effect. In this instance, both popular and nonpopular girls show a greater mean posttest-versus-pretest change in racial attitude score than do the boys. In the case of the popular children the difference between the means is significant at the .05 level; in the case of the nonpopular children it is not.

Figure 2b illustrates the Sex x Popularity interaction effect which emerges when the experimental group subjects are given Subtest B as a pretest and Subtest A as a posttest. While the boys show a nonsignificantly greater mean pretest-versus-posttest change in racial attitude score than do the popular girls, the nonpopular girls demonstrate a greater mean change than do the non-
FIGURE 2
MEAN DIFFERENCES BETWEEN PRETEST AND POSTTEST SCORES, ACCORDING TO SEX,
POPULARITY OF SUBJECT, AND ORDER IN WHICH SUBTESTS WERE GIVEN
popular boys (p. < .01). The interaction effect is greater among the nonpopular children.
CHAPTER FOUR

DISCUSSION AND SUMMARY

I. DISCUSSION

Generally speaking, the peers' modeling of pro-Negro responses appeared to be very effective for the children in this study. Children in the experimental group imitated the model's responses to a statistically significant degree, while control group subjects continued to exhibit pro-Caucasian/anti-Negro responses. However, in order to understand the results of the experiment, it is necessary to examine the effects of sex, grade, popularity, and rewardingness on the degree of imitation. The statistical analyses reveal significant main effects of sex and treatment (Popularity x Rewardingness) and several significant interaction effects.

EFFECTS OF GRADE AND TREATMENT GROUP

PRESCHOOLERS: When the mean changes in racial attitude scores of the preschool subjects are examined according to treatment group (Table 11), it becomes apparent that the results are similar to those obtained by Hartup and Coates (1967), although in this case the differences between individual pairs of means are not statistically significant. As in that study, the greatest
amount of imitative behavior is seen among nonpopular children who are exposed to nonrewarding models. These children imitate nonrewarding models to a greater extent than do rewarding models, and they show more imitative behavior than do the popular children.

For the subjects who had received frequent reinforcement from peers, the results support Mowrer's (1950; 1960) theory of secondary reinforcement. The theory states that an individual will imitate a rewarding model because reproducing the model's behavior has become in itself reinforcing. For the subjects who had received infrequent reinforcement from peers, however, the influence of the rewarding model did not lessen, as would be predicted. In addition, the influence of the non-rewarding model increased and was in fact greater than that of the rewarding model.

One explanation for this is that a child who receives little reinforcement from peers is one who is either actively rejected by peers or is fearful of social situations. He becomes anxious when he comes into contact with other children. Encounters with nonrewarding peers may raise the level of the child's discomfort, and this may in turn cause him to be more highly motivated to act appropriately in the situation. In this case acting appropriately included imitating pro-Negro responses. On the other hand, exposure to a rewarding model may reduce the child's anxiety, thereby lowering his motivation to
imitate. Another explanation is that the nonpopular children perceive children whom they do not like as more similar to themselves than children whom they find rewarding. They may see themselves as belonging to a group of unpopular or disliked children.

As Hartup and Coates note, their results imply a dual theory of peer imitation: a) for a child who has a history of frequent reinforcement from peers, the motivation to imitate the behavior of a rewarding model is greater than the motivation to imitate a nonrewarding model; b) for children who have a history of infrequent reinforcement from peers, contact with a rewarding model reduces anxiety and hence motivation to imitate. Contact with a nonrewarding model maintains or increases anxiety and hence the motivation to imitate. This dual theory is similar to Hill's (1967) hypothesis regarding anxiety and task performance. Furthermore, it resembles psychoanalytic theories of identification. The reinforcement history of the child may provide conditions under which anaclitic (imitation of a nurturant model) and defensive (imitation of a non-nurturant model) operate.

SECOND-GRADERS: Hartup and Coates used only preschool subjects in their study. In the present study the results for the second-graders are different from those of the preschoolers. When the results for the second grade boys and girls are examined together they show the popular second-graders reproducing more of the model's pro-Negro
behavior than the nonpopular children (Table 11). In addition, in the second grade group both the popular and nonpopular children are more likely to imitate a rewarding model than a nonrewarding one. The results for the children who are exposed to a rewarding model support the secondary reinforcement hypothesis.

Among the second-graders the nonpopular children do not imitate a nonrewarding model more than they do a rewarding model, as the preschoolers do. Furthermore, these nonpopular children imitate less of the model's behavior than do the popular children. One explanation for the differing results for the preschoolers and second-graders is that the older children are less likely to choose a mechanism of defensive identification. Another explanation is that they are less likely to perceive themselves as similar to peers whom they see as nonrewarding.

Lack of Imitation Among Preschool Boys

Table 13 shows that the preschool girls in the study imitate their peers more than do the boys (p < .01). Within the group of preschool boys the nonpopular boys are the only ones who reproduce the model's behavior at all, and they imitate the nonrewarding model to a greater extent than the rewarding model. Even in the NP-NRM group, however, the mean change in score is not significantly different from that of the control subjects.

When the results for male and female preschoolers are examined separately, it can be seen that for the girls
the difference between means for the Nonpopular-Non-
rewarding treatment group and the Popular-Rewarding
treatment group is negligible (means are 5.0 and 4.8,
respectively). The tendency to imitate nonrewarding models

TABLE 13

MEAN DIFFERENCES IN PRETEST-VS-
POSTTEST SCORES ACCORDING TO
AGE GROUP, SEX, AND
TREATMENT GROUP

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exists for nonpopular preschool girls, but it is not
greater than the tendency for the popular girls to imitate
rewarding models. While for the preschool boys a
mechanism of defensive identification or perceived
similarity seems to be at work, there is evidence that
the girls employ both defensive and secondary reinforce-
ment mechanisms in their imitative behavior. What is
most noteworthy about the results for the preschool boys
is that in this study they are much less influenced by
peer models than are preschool girls and older children.
One factor which may contribute to the lack of imitation among the preschool boys is undeveloped or unused verbal ability. Bandura (1969b) and others theorize the development of a verbal representation system which enables the individual to transform observed behavior into verbal symbols. The observer can later imitate the modeled behavior after giving himself covert verbal instructions. As mentioned previously, Bandura et al. (1966) have demonstrated that when a child does not generate verbal equivalents while he is observing novel behavior, he will be less able to reproduce the behavior later. In addition, in one study Bandura (1965a) found that even when offered positive incentives, preschoolers were able to reproduce a much lower percentage of a model's verbalizations (20%) than his motor responses (67%). In a lengthy review of studies of learning in children, Stevenson (1970) noted that studies of children as old as six and seven years do not consistently show that they use words appropriately to mediate their responses in a learning situation.

It has been demonstrated repeatedly that girls develop verbal abilities earlier than boys do and that throughout their formal education they perform better than boys on tests of verbal skills. It is speculated that one reason why the preschool boys imitated very little relative to the girls and older boys is that they failed to generate verbal representations or a rule (e.g.,
"Pair positive words with dark-skinned figures") to describe the model's responses. Thus when their turn came to perform the behavior, the preschool boys did not remember the relevant aspects of the model's behavior.

Stevenson has noted that the act of labeling objects and responses can probably help children to avoid two common obstacles to rapid learning: the child's failure to 1) focus attention on the stimuli at hand; and 2) discriminate the critical features by which the stimuli differ. Regarding the failure of younger children to pay attention, it is noteworthy that among the preschoolers several models apparently either did not understand the examiner's instructions (although they were given several trials) or forgot what they should do during the modeling sequence, since they failed to model the appropriate behavior. This indicates that they were either unable to keep in mind the instruction to "point to the one closer to my hand," or to use it to mediate their behavior. If some of the models were unable to perform appropriately, it is reasonable to assume that many of the experimental group subjects, even after being exposed to a model who demonstrated the same sort of behavior twelve times, did not pay close attention to the model and thus failed to acquire the modeled behavior.

**GREATER AMOUNT OF IMITATION AMONG OLDER CHILDREN**

The older children in the study reproduce more imitative behavior than do the preschoolers. As noted
above, one reason for this may be their more highly
developed verbal and attentional skills. Secondly,
through more extensive experience at school, church, and
organized groups such as Girl Scouts and Cub Scouts, the
older children are likely exposed to differing attitudes
about race and skin color. They should be more likely
than preschoolers to realize that conflicting views on the
matter exist. Furthermore, they have more opportunities
to learn these differing viewpoints and may be more able
to consider the various opinions and to adopt the views
of people outside their immediate family.

Furthermore, older children spend more time social-
izing than younger children. They spend more time playing
with peers and seeking other children's praise and
attention. It is reasonable to expect that elementary
school children, because of the amount of time they spend
in the company of peers, will be more likely than pre-
schoolers to attend to and imitate peers' behaviors.

**GREATER AMOUNT OF RACIAL BIAS AND IMITATION AMONG GIRLS**

The female subjects in the standardization group for
the PRAM II (Williams et al., 1975b) were not found to be
more biased toward Caucasian figures and against Negro
figures than the male subjects. The girls in the present
study tend to be more biased at the time of the pretest,
although this finding is not statistically significant
(The Sex x Grade interaction effect is at $p = .057$ level).
The greater pro-Caucasian/anti-Negro bias among girls has
also been found by Bird (1952), and Goodman found the preschool girls in her study to be more aware of racial differences than the boys. One reason for this may be that since girls are trained from the time they are very young to be aware of and concerned about personal appearance, they take more notice of skin color than boys do.

In addition to demonstrating a greater amount of racial bias on the pretest, the girls tend to be more influenced by peers to alter this biased behavior. They imitate more of the model's responses than do the boys. When, on a post hoc statistical test, the scores are broken down according to grade, it is demonstrated that this female-male difference in mean change score is significant \( p < .01 \) among the preschoolers (The mean is 4.0 for girls; 1.4 for boys) but not among the second-graders ( \( p > .05 \); mean change in score is 4.1 for girls; 2.5 for boys).

As mentioned previously (Maccoby and Jacklin, 1974), evidence does not exist to support the idea that girls are generally more compliant to peer pressure than are boys. Some studies have shown girls to be more compliant; others have demonstrated the opposite trend. It appears that sex differences in persuasibility and imitation depend upon the nature of the issue under consideration and how involved and informed each sex is concerning it.

It is possible that the greater amount of imitation by the girls in this instance is related to the nature of
the behavior modeled, which consists of pairing dark-skinned figures with positive evaluative adjectives in the presence of an adult female. Maccoby and Jacklin have noted that girls often demonstrate greater verbal facility than boys and have frequently been shown to comply with adults' directions more often than boys do. It may be that in the present study the girls interpreted the adult experimenter's failure to comment on the correctness or incorrectness of the model's performance as tacit approval and imitated the peer because they thought that in this way they were complying with the experimenter's wishes.
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II. SUMMARY

The purpose of this study was to explore the effects of peer modeling of pro-Negro bias on the racial attitudes of two age groups of children. Analyses of variance were performed comparing means on pre- and post-intervention scores on the Preschool Racial Attitude Measure II. The variables manipulated included sex of subject, grade (preschool and second grade), popularity of subject, rewardingness of model, and order in which subtests were administered.

The results of the pretest show that a majority of the children (percentages range from 60.0% to 71.3% depending on grade and sex) demonstrate a probable or definite pro-Caucasian/anti-Negro bias as reflected in their readily pairing positive evaluative adjectives with light-skinned figures and negative evaluative adjectives with dark-skinned figures. No significant differences according to sex, grade, or popularity were found on the pretest, although there was a tendency for boys, especially preschoolers, to show less bias. It was found that children who were given Subtest B had lower pro-Caucasian/anti-Negro bias scores than did those who were given subtest A.
A comparison of pretest-versus-posttest scores showed that children in preschool and the second grade did reproduce the model's pro-Negro responses to a significant degree. The experimental-group scores, which on the pretest had fallen in the "probable" and "definite" categories of C+/N- bias, fell in the "unbiased" category on the posttest. Scores in the control group remained unchanged.

In this study sex, age, popularity, rewardingness, and order of subtests do influence the extent to which children in these two age groups will imitate a peer model. Analyses of the data revealed significant main effects of Sex and Treatment (Popularity-Rewardingness) group as well as Grade x Treatment and Sex x Popularity x Order interaction effects.

The results for the preschool subjects are similar to those of Hartup and Coates (1967). They appear to support a dual theory of peer imitation: a) popular subjects imitate rewarding models to a greater extent than they do nonrewarding models; b) nonpopular subjects imitate nonrewarding models more than rewarding ones and do more imitating than the popular children do. However, the differences between individual means are not statistically significant. Among second-graders, both popular and nonpopular children reproduce more of the rewarding model's responses than the nonrewarding model's. In addition, the popular children in general do more imitating
than the nonpopular children do. Thus, while the preschoolers appear to employ a mechanism of defensive identification or respond in terms of perceived similarity as well as secondary reinforcement, the second-graders seem to favor the latter.

Sex of the subject is also a factor in determining the amount of imitative behavior performed. The male preschoolers reproduce relatively few of the peer models' behaviors; and although the effect of sex is not as great among the second-graders, it can be said that in the present study the girls generally do more imitating than the boys.

Some explanations put forth here for the differences in imitative responses according to age and sex involve differences in attentional processes, verbal abilities, tendency to comply with directions, and amounts of exposure to conflicting viewpoints.

One variable which unexpectedly affected scores significantly was the order in which subtests were administered. This effect appears to be related to the sex and popularity of the subject.

CONCLUSION

It is obvious from the results of the present study that many white children between the ages of four and nine years hold definite pro-Caucasian/anti-Negro prejudices. Furthermore, it is apparent that preschool and second grade children can be influenced by their peers on
the issue of racial bias. Specifically, after merely watching a peer express a racial bias counter to their own they will reproduce significant numbers of the peer's responses.

There were 114 subjects included in this study, which means that in each cell of the experimental design there were 5 or 6. This is admittedly a small number; therefore, one must be conservative in generalizing from the results. No claims are made that the modeling effect which was demonstrated will be a lasting one. It has merely been shown that young children can be influenced by peer models on the issue of race. It is speculated that peers are one group of people who contribute to the development of a child's racial attitudes, and they may be a strong influence. It is assumed that if the peers (as well as the adults) in a child's environment habitually modeled pro-Negro responses the effects of the modeling would be long-lasting. Other factors which have previously been shown to facilitate imitative responses include positive reinforcement and the use of socially powerful models.

The extent to which children will imitate their peers is determined by the action and interaction of several factors, including the sex, age, and popularity of the subject, the prior rewardingness of the model, and the nature of the behavior to be imitated. A child's developmental stage and his history of reinforcement from peers
contribute importantly to the effects of rewards from a model on imitation. Further research is needed in order to define more specifically the factors which impede or facilitate the acquisition and performance of imitative responses.
APPENDIX A
SAMPLE PARENTAL CONSENT FORM

Dear Parent:

The principal of the ________ school has given me permission to conduct some research for my doctoral thesis in psychology. I am interested in seeing how much young children imitate each other's behavior.

The children who participate in the study will leave the classroom for only about fifteen minutes. Each child will be asked to look at some pictures (of people of all ages) and to point to the person in each picture that the accompanying story is about. A sample story:

"Here are two little boys. One of them is a kind little boy. Once he saw a kitten fall into a lake and he picked the kitten up to save it from drowning. Which is the kind little boy?"

Some of the children will watch a classmate choose people for a set of stories and then will choose people in some more picture-stories themselves.

I expect that this activity will be fun for the children. However, children will not be made to participate or finish the task if they become anxious or decide that they want to stop. The information collected during this study will be kept confidential, and the children's names and answers will not be put on any records.

Please sign one of the forms below and have your
child return it to his teacher as soon as possible.

Sincerely yours,

Susan Newkirk-Sanborn

Susan Newkirk-Sanborn
Doctoral Candidate, Dept. of Psychology
The Ohio State University
I give permission for my child ________________ to take part in the study to be conducted by Susan Newkirk-Sanborn.

Parent's signature__________________________

-----------------------------------------------

I do not wish to have my child ________________ participate in this study.

Parent's signature__________________________

-----------------------------------------------

I want to know more about the study before I give my permission. Please call me.

Parent's signature__________________________

Telephone number__________________________
STORIES AND DESCRIPTIONS OF PICTURES OF
PRESCHOOL RACIAL ATTITUDE MEASURE II*

PRAM II

Subtest A

(Sex Role)

1. SR - Cauc. girl - Cauc. boy sitting

Here are two children. One of these children has four
dolls with which they like to have tea parties. Which
child likes to play with dolls?

(Racial Attitude)

2. RA - Negro little boy - Cauc. little boy - walking

Here are two little boys. One of them is a kind little
boy. Once he saw a kitten fall into a lake and he picked
up the kitten to save it from drowning. Which is the kind
little boy?

3. RA - Cauc. little girl - Negro little girl - standing

Here are two little girls. One of them is an ugly little
girl. People do not like to look at her. Which is the
ugly little girl?

4. SR - Negro teenage boy - Negro teenage girl - sitting

Here are two children. They are thinking about what they
want to be when they grow up. One of them wants to be a
policeman. Which one wants to be a policeman?

5. RA - Cauc. teenage boy - Negro teenage boy - standing

Here are two boys. One of them is a friendly boy. He
has a lot of friends. Which one is the friendly boy?

6. RA - Negro teenage girl - Cauc. teenage girl - walking

Here are two girls. When a lady asked one of them where
she lived, the girl gave the wrong answer. Which is the
wrong girl?

7. SR - Cauc. man - Cauc. woman - walking

Here are two people. After supper one of these people
clears the table and washes all the dishes. Which person
washes the dishes?

*With permission of John E. Williams
Series A (cont.)

8. RA - Cauc. woman - Negro woman - sitting

Here are two women. One of them is a nice woman. She does nice things for her husband and children. Which is the nice woman?

9. RA - Negro man - Cauc. man - standing

Here are two men. One of them is a bad man. He took money out of his children's piggy bank and never put it back. Which is the bad man?

10. SR - Negro teenage girl - Negro teenage boy - standing

Here are two young people. One of them works at a gas station after school. Which one works at a gas station?

11. RA - Negro man - Cauc. man - standing

Here are two men. One of them is a healthy man. He never has a cold or a high temperature. Which is the healthy man?

12. RA - Cauc. woman - Negro woman - sitting

Here are two women. One of them is a sad woman. She has been left alone with no one to talk to. Which is the sad woman?

13. SR - Cauc. woman - Cauc. man - standing

Here are two people. One of these people has baked two delicious apple pies. Which person baked the pies?

14. RA - Cauc. little boy - Negro little boy - standing

Here are two little boys. One of them is a clean little boy. Whenever he washes his face he also washes behind his ears. Which is the clean little boy?

15. RA - Negro teenage girl - Cauc. teenage girl - sitting

Here are two girls. One of them is a stupid girl. She doesn't even know how to spell her name. Which is the stupid girl?

16. SR - Negro man - Negro woman - standing

Here are two people. When the car won't run, one of them is always able to fix it. Which person can fix the car?

17. RA - Cauc. man - Negro man - sitting
Series A (cont.)

Here are two men. One of them is a very selfish man. He does not care about anyone except himself. Which is the selfish man?

18. RA - Negro woman - Cauc. woman - walking

Here are two women. People say that one of them is a wonderful woman. She can do almost anything. Which is the wonderful woman?

Series B

19. SR - Cauc. little girl - Cauc. little boy - standing

Here are two children. One of them wants to grow up and be a cowboy. Which child wants to be a cowboy?

20. RA - Negro little girl - Cauc. little girl - sitting

Here are two little girls. Everyone says that one of them is very pretty. Which is the pretty girl?

21. RA - Cauc. little boy - Negro little boy - sitting

Here are two little boys. One of them is a very naughty little boy. He drew pictures on the walls of his house with his crayons and upset his mother. Which is the naughty little boy?

22. SR - Negro little boy - Negro little girl - standing

Here are two children. One of them likes to dress up in their mother's clothes and pretend that they are grown up. Which child likes to dress up in their mother's clothes?

23. RA - Cauc. teenage girl - Negro teenage girl - standing

Here are two girls. One of them is a happy girl. She smiles almost all of the time. Which one is the happy girl?

24. RA - Negro teenage boy - Cauc. teenage boy - sitting

Here are two boys. One of them is a cruel boy. When he comes home from school and his dog runs to meet him, he kicks his dog. Which is the cruel boy?

25. SR - Cauc. woman - Cauc. man - sitting

Here are two people. One of them likes to go shopping. When they go shopping they like to buy new dresses. Which person likes to buy new dresses?
26. RA - Cauc. man - Negro man - walking

Here are two men. One of them is a mean man. He throws rocks at dogs and cats when they come into his yard. Which is the mean man?

27. RA - Negro woman - Cauc. woman - standing

Here are two women. One of them is a good woman. She does things for her neighbors and her children. Which is the good woman?

28. SR - Negro man - Negro woman - sitting

Here are two people. One of them built a barn for their animals to live in. Which person built the barn?

29. RA - Negro woman - Cauc. woman - standing

Here are two women. One of them is a helpful woman. Whenever someone is sick she goes to help them. Which is the helpful woman?

30. RA - Cauc. man - Negro man - sitting

Here are two men. One of them is an unfriendly man. He will not speak to any of the children playing in his neighborhood. Which is the unfriendly man?

31. SR - Cauc. woman - Cauc. man - standing

Here are two young people. One of them likes to play football every afternoon after school. Which one likes to play football?

32. RA - Cauc. teenage boy - Negro teenage boy - walking

Here are two boys. One of them is a smart boy. When the T.V. set breaks, he can fix it all by himself. Which is the smart boy?

33. RA - Negro little girl - Cauc. little girl - walking

Here are two little girls. One of them is a dirty little girl. People say she does not take a bath very often. Which is the dirty little girl?

34. SR - Negro teenage boy - Negro teenage girl - walking

Here are two young people. One of them likes to wear lipstick. Which one likes to wear lipstick?
35. RA - Cauc. man - Negro man - walking

Here are two men. One of these men is right. When someone asks him a question, he always knows the right answer. Which man is right?

36. RA - Negro woman - Cauc. woman - standing

Here are two women. One of them is a sick woman. She has to stay in the house most of the time. Which is the sick woman?
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