DOCUMENT RESUME

ED 069 426 PS 006 168

AUTHOR Williams, John E.
TITLE Racial Attitudes in Preschool Children: Modification Via Operant Conditioning, and a Revised Measurement Procedure.
PUB DATE 72
NOTE 17p.; Paper presented at the 80th Annual Convention of the American Psychological Association (Honolulu, Hawaii, September 2-8, 1972)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Adults; Affective Behavior; Early Experience; Evaluation; *Measurement Techniques; *Operant Conditioning; Parent Influence; Pictorial Stimuli; *Preschool Children; *Racial Attitudes; Rating Scales; Research; *Semantic Differential; Youth
IDENTIFIERS *Preschool Racial Attitude Measure

ABSTRACT

The problem of measuring attitudes in preschool children is discussed. The general rationale employed is closely related to that of the semantic differential (SD). Research employing the SD with older children and adults has demonstrated that the primary dimension of affective meaning is that of evaluation. It has also been shown that evaluation scores from the SD are closely related to scores obtained from conventional attitude scales. It was demonstrated that a comparable evaluation dimension is present at the preschool level, and procedures were developed for assessing attitudes in preschool children employing this rationale. Procedures are picture-story techniques in which the child is shown a picture containing two figures and is told a story in which a positive or negative adjective is employed. The child is asked to select the figure which he thinks is the one described in the story. This method has been used to assess preschooler's attitudes toward the colors white and black and toward human figures with light and dark skin-color. Findings and results of this and other studies are described and a new revised version of the Preschool Racial Attitude Measure is presented. Conclusions include: (1) A child's racial attitudes may be associated with certain parental variables, and (2) Racial attitudes may partially result from the child's early learning experiences involving light and darkness. (Author/CK)

RACIAL ATTITUDES IN PRESCHOOL CHILDREN: MODIFICATION VIA OPERANT CONDITIONING, AND A REVISED MEASUREMENT PROCEDURE

John E. Williams

Wake Forest University

(presented as part of symposium, "Children's Racial Attitudes: Measurement and Modification", APA, 1972, Honolulu)

I. Introduction

For the past several years, I and my associates have been working on the problem of measuring attitudes in preschool children. The general rationale which we have employed is closely related to that of the semantic differential which was developed by Charles Osgood and his associates (1957) as a method for assessing the affective or connotative meanings of concepts. Research employing the semantic differential with older children and adults has demonstrated that the primary dimension of affective meaning is that of evaluation. It has also been shown that evaluation scores from the semantic differential are closely related to scores obtained from conventional attitude scales.

In our studies, we have demonstrated that a comparable evaluation dimension is present at the preschool level (McMurtry and Williams, 1972), and we have developed procedures for assessing attitudes in preschool children employing this rationale. Our attitude assessment procedures are picture-story techniques in which the child is shown a picture containing two figures and is told a story in which a positive or negative adjective is employed. Following the story, the child is asked to select the figure which he thinks is the one described in the story. To date, we have employed this general method to assess preschooler's attitudes toward the colors white and black and toward human figures with light and dark skin-color (e.g., Williams and Roberson, 1967; Williams and Rousseau, 1971; Williams, Best, Boswell, Mattson, and Graves, submitted). Recently, we have begun to use the method to assess

preschooler's attitudes toward men and women. In principle, the method could be used to assess attitudes toward any human attribute which can be represented pictorially, and for which several instances can be devised.

In this paper, I will first describe our findings and those of other investigators regarding the evaluative meanings of the colors black and white to preschool children. Second, I will describe our findings from studies of racial attitude in preschool children. Third, I will describe the results of studies which have attempted to modify racial attitudes by operant conditioning techniques, and by classroom curriculum procedures. Fourth, I will describe the new revised version of our Preschool Racial Attitude Measure, and present the initial standardization data for this procedure. Last, I will discuss some theoretical questions and some of the current research directions which we are pursuing.

II. Studies of Black-White Color Meanings

Let us now turn to the matter of the evaluative responses of preschoolers to the colors black and white.

(Slide #51: Black and White Bears)

Suppose we present this picture to a preschool child, tell a little story, and ask him: "Which bear is the good bear?" Actually, there is a strong probability that the child will select the white bear as the good one. What if we now present a black horse and a white horse, tell a story, and ask, "Which is the bad horse?" The child most likely will choose the black horse. This illustrates the general procedure of our Color Meaning Test (CMT) (Williams and Roberson, 1967). The child is told twelve stories using positive or negative evaluative adjectives, and makes twelve choices between white or black animals. The adjectives employed in this procedure can be seen in the next slide.

(Slide #67: Positive and Negative Evaluative Adjectives)

The adjectives used in the color meaning test being described (CMT I) are those seen above the dotted line; the adjectives below the line are those which have been

added in more recent revisions of our procedures. The child's twelve responses are scored by counting one point for each selection of a white figure in response to a positive adjective, and one point for each selection of a black figure in response to a negative adjective. The scores, thus, range from 0 to 12, with low scores indicating a pro-black/anti-white bias, high scores indicating a pro-white/anti-black bias, and scores around 6 indicating no bias.

The next slide summarizes several studies in which the color meaning test has been used with preschool children.

(Slide #69: Summary of Color Meaning Studies)

You will note, first, that the studies are grouped by the race of the children. Information is also provided concerning the number of children, the mean or median age, the race of examiner, the social class (when known), the location and year of the study, and the mean color meaning score. For the groups of Caucasian children, you will note that all mean scores are in the upper half of the possible score distribution, and thus reflect a pro-white/anti-black bias. For example, the 111 children in our 1966 study (Williams and Roberson, 1967) mean age 5-4, obtained a mean score of 10.0; while Tse's 30 children from New York, with a mean age of 4-4, tested in 1971, obtained a mean score of 10.2. Turning to the studies of Negro children, you will note that they display the same pro-white/anti-black tendency as the Caucasian children, but not to the same degree. For example, consider the 45 Negro children, aged 5-4, from the Vocke (1971) study, who were tested by Negro examiners, and obtained a mean color meaning score of 8.6. This tendency toward the positive evaluation of white and negative evaluation of black is also documented in the work of Dr. Johnson and his colleague Dr. Stabler who have employed a different methodology. I presume Dr. Johnson will be discussing this with you in the next presentation.

Before leaving the topic of color meanings, let me note that we now have a lengthened and otherwise improved procedure called Color Meaning Test II which we are

now employing in our studies and which is available for use by other investigators.

(Slide Off)

III. Studies of Racial Attitudes

Let us turn now to the matter of racial attitudes in preschool children. The attitude assessment procedure which we have developed is called PRAM - Preschool Racial Attitude Measure. The research findings which I will describe to you are based primarily on the early version of this procedure - called PRAM I (Williams and Roberson, 1967). Later in the paper I will describe the revised version of the procedure - called PRAM II.

The PRAM I procedure employs the same 12 evaluative adjectives as were used on the Color Meaning Test I. These were six positive and six negative adjectives above the dotted line in the slide which you saw a few moments ago. The PRAM I procedure is generally parallel to that of Color Meaning Test I.

(Slide #54: Light- and Dark-Skinned Boys)

In the PRAM I procedure, the child is shown a series of pictures of human figures who differ in skin and hair color. With each picture he is told a story containing a positive or negative adjective and is asked to select the figure in the story. For example: "Here are two little boys. One of them is a good little boy. He does what his mother asks him to do. Which is the good little boy?" The score range for PRAM I is again 0 to 12. Low scores indicate a pro-Negro/anti-Caucasian bias; high scores indicate a pro-Caucasian/anti-Negro bias.

(Slide #68: Summary of Racial Attitude Studies)

This slide summarizes several studies in which PRAM I has been used to assess racial attitudes in preschool children. Once again, the studies are divided according to the race of the children. Among the Caucasian groups, you will note that all mean scores are in the upper part of the score distribution, thus, indicating pro-Caucasian/anti-Negro bias. Among the Negro groups, the mean scores provide evidence of the same pro-Caucasian/anti-Negro bias, although the bias does not seem to be as strong here.

Of particular interest is the study conducted by H. McAdoo (1970) in which PRAM I was administered by Negro examiners to Negro preschoolers in Michigan, and in Mississippi. The Michigan group consisted of 35 children, median age 5 years, 1 month, from working class homes in an urban area, who had had extensive contact with Caucasian persons. The Mississippi group consisted of 43 children, median age 5 years, 6 months, from Mound Bayou, a virtually all black community which was founded in 1877 by former slaves, and which has been black owned and controlled since that time. When PRAM I was administered to these two groups of children, the mean RA score for the Michigan group was 8.7, while that for the Mound Bayou children was 8.9. The finding of pro-Caucasian/anti-Negro bias in the Mound Bayou children is particularly interesting since these children have had virtually no direct contact with Caucasian persons, and have had an abundance of high status Negro models with whom to identify. One additional finding of McAdoo is noteworthy; the RA scores of the subjects in both groups were not correlated with I. Q. scores.

(Slide Off)

IV. Racial Attitude Modification Studies

We and other investigations have conducted studies of the modification of racial attitudes, as assessed by the PRAM procedures. These studies can be placed in three general groups. In the first group of studies, direct behavior modification or operant conditioning techniques have been used to attempt to reverse the initial pro-Caucasian anti-Negro bias of Caucasian preschoolers (Edwards and Williams, 1970; McMurtry and Williams, 1972). The data in the following slide indicate the relative ease with which such a reversal can be accomplished.

(Slide #58: Edwards and Williams Learning Data)

This slide shows the performance across 12 trials of a group of 60 Caucasian children who were being given negative verbal reinforcement for "conventional" responses, i. e., for selecting a light-skinned figure in response to a story containing a positive evaluative adjective, or a dark-skinned figure in response to a story containing a negativ

evaluative adjective. Shown in the slide are per cent of subjects giving reversed or unconventional responses on each of the twelve learning trails. (A correct response is a reversed or unconventional response). It can be seen that the children began the task with a clear initial tendency toward "incorrect" or conventional responses, but under the influence of the negative verbal reinforcement quickly hifted to a preponderance of reversed or unconventional responses. The non-reinforced control subjects continued to give a preponderance of conventional responses throughout the task. It was clear that the verbal reinforcement was effective in bringing about a "reversal-shift" in the performance of the experimental subjects, in spite of their young age. Thus, the racial bias assessed by the PRAM procedure can be easily manipulated by behavior modification techniques.

The second type of attitude modification study has been based on the theory that the affective meanings of black and white may serve as a support for racial bias. In these studies, behavior modification techniques have been used to weaken the child's tendency to view the color white as good, and the color black as bad, by the use of negative reinforcement for the conventional responses. Following this training, the child is then tested with the PRAM procedure to determine whether his pro-Caucasian. angi-Negro racial bias has been reduced. To date, three studies of this type have been conducted and each has provided evidence that the weakening of black-white color meanings results in a reduction in pro-Caucasian/anti-Negro bias as measured by the PRAM procedure. In each case the effect on racial attitude has been, not to reverse it but to move the mean scores toward the unbiassed or chance range of response (Williams and Edwards, 1969; J. McAdoo, 1970; Shanahan, 1972).

The third type of attitude modification study has used special classroom curriculum techniques to attempt to modify racial attitude as assessed by the PRAM procedures. The results of these studies have been mixed. Patricia Walker (1971) at the University of Kentucky studied the effects of a six-week curriculum which

involved a daily period in which stories portraying blacks in a favorable manner were read to kindergarten children by their teachers. This treatment had no measureable effect on pro-Caucasian/anti-Negro bias among the children studied, whether Caucasian or Negro.

In a second curriculum study conducted by John McAdoo (1970) at the University of Michigan, black preschool children participated in a six-week, 30 hour black consciousness curriculum conducted by black activist college students. This treatment had no significant effect on the pro-Caucasian/anti-Negro bias of these children, and the direction of the observed change was one point in the "wrong" direction (7.5 to 8.5).

More encouraging are the results from a third curriculum study conducted this year by Anne Yancey (1972) at Pennsylvania State University. The curriculum in this study had four main aspects: first, the reading of the usual stories of black heroes; second, the viewing of film strips and movies depicting blacks in a favorable manner; third, the use of special art activities using black and brown as predominant colors: and fourth, the use of an ingenious modification of one of Johnston and Stabler's techniques whereby the child learned to expect good things to come out a black box and neutral things to come out of a white box. As a result of this multi-faceted curriculum, the racial attitude scores of the Caucasian first grade subjects showed a significant drop (from 9.8 to 6.2) indicating that, for the group as a whole, the initial pro-Caucasian bias had been eliminated.

The attitude modification studies, taken as a whole, provide encouraging evidence that racial bias in young children can be reduced or eliminated by special procedures. On the other hand, it is clear that much additional research is needed to develop practical training procedures particularily of the classroom variety. One approach which will be explored during the coming year will be the use of a "teaching machine" procedure aimed at reducing racial bias in preschool children.

V. The Revised Preschool Racial Attitude Measure: PRAM II

I would like to take a few moments now to describe the revised version of our PRAM procedure - PRAM II (Williams, Best, Boswell, Mattson, and Graves, submitted). The principal objectives in developing the revised version were to lengthen the procedure to increase reliability, to improve the artistic quality of the drawings, and to remove the differential hair color of the figures. The PRAM II figures differ only in skin color; pinkish-tan vs medium brown.

(Slide #67: Positive and Negative Evaluative Adjectives)

This slide, seen earlier, shows the twenty-four evaluative adjectives used with the PRAM II procedure. In taking the test, the child selects between the light- and dark-skinned human figures as being the one described in a story containing one of these adjectives. Like its predecessor, PRAM II is scored by counting one point for selecting a light-skinned figure in response to a positive adjective, and one point for selecting a dark-skinned figure with a negative adjective. With 24 pictures and stories, the score range is now 0 to 24, with high scores indicating pro-Caucasian/anti-Negro bias, low scores indicating pro-Negro/anti-Caucasian bias, and scores around 12 indicating no bias.

(Slide #72: Frequency Distributions of PRAM II Scores)

In this slide are shown the frequency distributions of PRAM II racial attitudes scores for 252 Caucasian preschoolers, and 140 Negro preschoolers. Each group has a mean age of 5 years, 4 months and is composed of equal numbers of males and females. In the background of each frequency distribution is the smoothed binomial curve which would be expected if the children were responding on a chance basis. The most dramatic effect seen in the slide is the tendency in both groups toward high scores, that is, toward pro-Caucasian/anti-Negro bias. Also of interest is the appreciable minority of Negro subjects scoring at the low or pro-Negro end.

Perhaps some of you are wondering about race of examiner effects. We have studied this at some length. At first we thought we had evidence that children obtain higher scores with Caucasian examiners, but this has not held up in later studies. At present, we are retaining the null hypothesis regarding race of examiner effects. Certainly, race of examiner is not an important variable in performance on PRAM II.

You may be interested in a word about psychometric characteristics of the PRAM II scores. The internal consistency is about .80. The test-retest reliability across a one-year interval from age 4 to age 5 is about .55. The twenty-four item test can be subdivided into two equivalent short forms, for use in repeated testing research designs; for example, before and after some special treatment.

You may be wondering about the relationship of the racial attitude scores from the PRAM procedure to the scores from the Color Meaning Test. Our evidence is that while scores on the two procedures are somewhat related (about 10% common variance), each possesses independent non-error variance indicating that the two tests are assessing appreciably different concepts.

Before leaving the PRAM II data, let me note an additional finding of considerable theoretical interest. The relatively reliable racial attitude scores from PRAM II are not correlated with I. Q., nor with age, in the age range studied, that is from age 3 to age 7.

(Slide Off)

VI. Conclusions and Future Directions

Let me conclude my remarks by making a few observations of a theoretical nature, and by pointing out some future research directions.

We have seen that the PRAM II racial attitude scores provide a reliable assessment of a distinctive behavioral trait in preschool children. While this trait is appreciably associated with individual differences in black-white color meanings, and shows some relationship to race of subject, it is not appreciably related to I. Q., sex, or age among preschool children. Under what circumstances and at what age are these relatively

stable individual differences in racial attitude learned? First, we can note that the available research findings seem inconsistent with the general normative theory of prejudice which proposes that racial bias is first acquired by preschool children as a result of contact with a prejudiced society. Presumably, traits acquired as a result of contact with general social influences will show correlations with I. Q. and age, but such are not found for racial attitude, or color-meaning, scores. A different theoretical approach would propose that the individual differences in racial attitudes of preschoolers are, at least in part, a reflection of more general personality and/or cognitive traits in the child; for example, aggressivity, self-esteem, cognitive style, etc.

Closely related to this is the idea that the child's racial attitudes may be associated with certain parental variables. The latter might be of an obvious nature, such as parental attitudes toward race and color; or more subtle, such as the parents' personality traits (e.g., aggressivity, self-esteem) or cognitive style (e.g., flexibility-rigidity). These hypotheses could be explored through studies of the possible relationships among attitudinal, personality, and cognitive variables as assessed in the child and in his parents. Comparative studies of the racial attitudes of preschool children and that of their older siblings might also prove instructive.

As an additional line of inquiry, one can speculate that racial attitudes may result, at least in part, from the child's early learning experiences involving light and darkness. Homo sapiens is a diurnal animal who has difficulty in maintaining orientation and functioning under low levels of illumination, and it may be that darkness is as intrinsically aversive to young humans as it is to certain sub-human primates such as the squirrel monkey (Parker, 1966). Individual differences in the experience of young children with the dark of night might well lead to differences in their evaluation of dark colored stimuli, including human figures. One step toward exploring this theory would be to determine whether racial attitude, or color-meaning, scores are associated

with individual differences in "fear of the dark" among four-and five-year-old children. A second step would be to determine whether Caucasian and Negro children of one and two years of age display preferential behavior for white over black objects, and for light-skinned over dark-skinned persons. If such were found, it might then be possible to design studies to explore these phenomena in infants.

In closing, let me say that we would be most pleased to make our PRAM II materials or the Color Meaning Test II materials available to any of you who would like to use them for research in these areas.

References

Figura, A. L. The Effect of Peer Interaction on the Self-Concept of Negro Children. Master's Thesis, DePaul University, 1971.

McAdoo, H. P. Racial Attitudes and Self-Concepts of Black Preschool Children. Doctoral Dissertation, University of Michigan, 1970.

McAdoo, J. L. An Exploratory Study of Racial Attitude Change in Black Preschool Children Using Differential Treatments. Doctoral Dissertation, University of Michigan, 1970.

McMurtry, C. A., and Williams, J. E. The evaluation dimension of the affective meaning system of the preschool child. Developmental Psychology, 1972, 6, 238-246.

Osgood, C. E., Suci, G. J., and Tannenbaum, P. H. The measurement of meaning. Urbana: University of Illinois Press, 1957.

Parker, C. E. Total darkness as an aversive stimulus condition for the squirrel monkey. Psychonomic Science, 1966, 6, 111-112.

Shanahan, J. K. The Effects of Modifying Black-White Concept Attitudes of Black and White First Grade Subjects Upon Two Measures of Racial Attitudes. Doctoral Dissertation, University of Washington, 1972.

Skinto, S. M. Racial Awareness in Negro and Caucasian Elementary School Children. Master's Thesis, West Virginia University, 1969.

Vocke, J. M. Measuring Racial Attitudes in Preschool Negro Children. Master's Thesis University of South Carolina, 1971.

Walker, P. A. The Effects of Hearing Selected Children's Stories That Portray Blacks in a Favorable Manner on the Racial Attitudes of Groups of Black and White Kindergarten Children. Doctoral Dissertation, University of Kentucky, 1971.

Williams, J. E., Best, D. L., Boswell, D. A., Mattson, L. A., and Graves, D. J. Preschool Racial Attitude Measure II. (Under editorial review.)

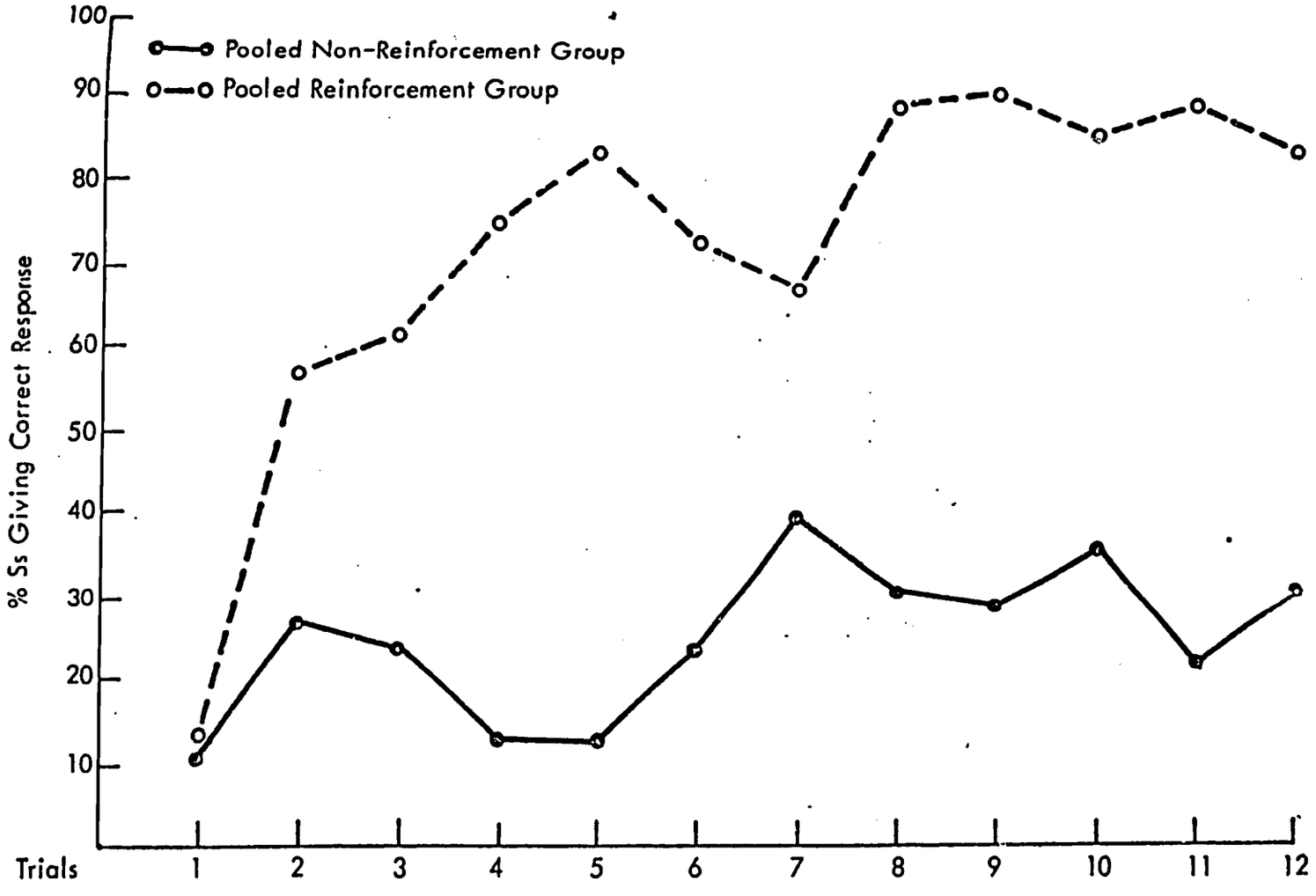
Williams, J. E., and Edwards, C. D. An exploratory study of the modification of color concepts and racial attitudes in preschool children. Child Development, 1969, 40, 737-750.

Williams, J. E., and Roberson, J. K. A method of assessing racial attitudes in preschool children. Educational and Psychological Measurement, 1967, 27, 671-689.

Williams, J. E., and Rousseau, C. A. Evaluation and identification responses of Negro preschoolers to the colors black and white. Perceptual and Motor Skills, 1971, 33, 587-599.

Yancey, A. V. A study of racial attitudes in White first grade children. Unpublished paper, Pennsylvania State University, 1972.

Slide #58



Percent Ss in pooled reinforcement and pooled non-reinforcement groups giving a correct response (dark-skinned person = good or light-skinned person = bad) on each Learning Phase (Phase 1) trial.

Slide #67

ADJECTIVES USED IN PRAM AND CMT PROCEDURES

Positive Evaluative Ajectives (PEA's)	Negative Evaluative Adjectives (NEA's)
clean	bad
good	dirty
kind	mean
nice	naughty
pretty	stupid
smart	ugly
friendly	cruel
happy	sad
healthy	selfish
helpful	sick
right	unfriendly
wonderful	wrong

Note: All 24 adjectives are used in PRAM II procedure. Adjectives above dotted line were also used in PRAM I

Slide #68

MEAN RACIAL ATTITUDE (RA) SCORES IN VARIOUS STUDIES (PRAM-I)

Investigator (s)	N	Av. Age	Race of E	Social Class	State-Year	Mean RA
Caucasian Groups						
Williams and Roberson (1967)	111	5-4	Cauc.	M	N.C. ('66)	10.3
Williams and Edwards (1969)	84	5-6	Cauc.	M	N.C. ('67)	9.6
Thompson *	27	3-8	Cauc.	(?)	Calif. ('68)	9.1
Bridges *	31	4-8	Cauc.	M	Texas ('69)	9.7
Bridges *	24	6-11	Cauc.	L	Texas ('69)	11.5
Firestone and Feinstein*	16	4-11	Cauc.	(?)	Conn. ('69)	10.0
Keller *	24	5-9	Cauc.	mixed(L&M)	Ohio ('70)	9.8
Tse*	30	4-4	Cauc.	M	N.Y. ('71)	10.0
				(Mean of Caucasian Means = 10.0)		
Negro Groups						
Vocke (1971)	45	5-5	Cauc.	L	S.C. ('70)	9.5
Vocke (1971)	45	5-5	Negro	L	S.C. ('70)	8.6
McAdoo, H. (1970)	35	5-1	Negro	L	Mich. ('70)	8.7
McAdoo, H. (1970)	43	5-6	Negro	L	Miss. ('70)	8.9
McAdoo, J. (1970)	65	4-6	Negro	L	Mich. ('70)	7.8
				(Mean of Negro Means = 8.7)		

* Data from unpublished studies

Slide #69

MEAN COLOR MEANING (CM) SCORES IN VARIOUS STUDIES

Investigator (s)	N	Av. Age	Race of E	Social Class	State-Year	Mean CM
Caucasian Groups						
Williams and Roberson (1967)	111	5-4	Cauc.	M	N.C. ('66)	10.0
Williams and Edwards (1969)	84	5-6	Cauc.	M	N.C. ('67)	9.2
Skinto (1969)	28	7-6	Cauc.	LM	W.Va. ('69)	9.8
Keller *	24	5-9	Cauc.	mixed(L&M)	Ohio ('70)	10.2
Figura (1971)	23	5-0	Mixed	L	Ill. ('71)	8.3
Tse *	30	4-4	Cauc.	M	N.Y. ('71)	10.2
					(Mean of Caucasian Means = 9.6)	
Negro Groups						
Skinto (1969)	26	7-6	Cauc.	LM	W.Va ('69)	8.4
Vocke (1971)	45	5-6	Cauc.	L	S.C. ('70)	9.5
Vocke (1971)	45	5-6	Negro	L	S.C. ('70)	8.6
Williams and Rousseau (1971)	89	5-3	Cauc.	L	N.C. ('70)	8.9
Figura (1971)	56	5-0	Mixed	L	Ill. ('71)	7.6
					(Mean of Negro Means = 8.6)	

---

* Data from unpublished studies

Slide #72

FREQUENCY DISTRIBUTIONS OF PRAM II RA-T SCORES