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The Role of Verbal Incentives and Researcher Attitude in the Motivation of Preschool Children from Different Socioeconomic Levels

Carol Hunter Byrnes

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THE ROLE OF VERBAL INCENTIVES AND RESEARCHER ATTITUDE
IN THE MOTIVATION OF PRESCHOOL CHILDREN
FROM DIFFERENT SOCIOECONOMIC LEVELS

by

Carol Hunter Byrnes

A thesis submitted in partial fulfillment
of the requirements for the degree
of
MASTER OF SCIENCE
in
Family and Child Development
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Carol Hunter Byrnes

Carol Hunter Byrnes
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ABSTRACT

The Role of Verbal Incentives and Researcher Attitude in the Motivation of Preschool Children From Different Socioeconomic Levels

by

Carol Hunter Byrnes, Master of Science

Utah State University, 1972

Major Professor: Dr. Don Carter
Department: Family and Child Development

The motivating effects of positive and negative verbal reinforcement and researcher attitude on the performance of preschool children were studied in relation to socioeconomic level. Forty children from the Utah State University Child Development Laboratory and forty from Head Start classrooms in northern Utah served as subjects. Each child performed the simple task of placing pegs in a pegboard during a 60-second time interval; once under conditions of positive verbal reinforcement and positive attitude, and again, under one of four experimental conditions: control; positive reinforcement/positive attitude; negative reinforcement/positive attitude; or negative reinforcement/negative attitude.

The findings seemed to indicate that the effectiveness of verbal reinforcement and researcher attitude on the motivation of preschool children varies with socioeconomic level. The variance tends to be one of greater response to either of the four experimental reinforcement conditions by children from the lower socioeconomic class than by
those from the middle class. Differences in the effectiveness of various reinforcement conditions were not significant.
INTRODUCTION

In October, 1971, the researcher first became aware of an unpublished study (Geddes, 1971) entitled "Verbal Motivational Reinforcement of Preschool Children," conducted in the Iowa State University Human Development Laboratory. The report of that study served to focus the researcher's attention on the question of verbal reinforcement as a motivating factor in the performance of preschool children. With respect to her own teaching experience, the researcher had observed a tendency in teachers of young children to use verbal reinforcement primarily as a means of building a positive self-concept in the child, or eliminating his undesirable responses, while virtually ignoring the possible effects of reinforcement on performance. The potential value of such reinforcement lies in the possibility that increasing the rate of performance and response could result in increased learning. In her close work with disadvantaged children, the researcher had keenly felt the need for a means of increasing their rate of learning.

Statement of the problem

The problem of motivation in learning has been one of the most controversial issues in psychology (Ausubel, 1958); however, it is generally accepted today that motivation has great relevance to the young child's development. Two general categories of motivational factors exist: the homeostatic motivators, or internal drives such as hunger, thirst, pain and learning acquisition; and the external, or applied, reinforcers. Emphasis today is on intrinsic motivation, but
there is evidence that intrinsic incentives are insufficient to motivate disadvantaged children to learn skills and concepts necessary to function in a complex culture (Hawk, 1968). John McVicker Hunt (1971) suggests that teaching may best be done by preparing the environment for children's learning, and then relying on intrinsic motivation. However, he agrees with Hawk that this may not be sufficient in "...the case of the culturally deprived child, for it may well be necessary to change the child's motivation from one already spoiled by the impoverished characteristics before he can begin to learn" (Hunt, 1971, p. 80). Whereas the middle socioeconomic class child more often is motivated to perform by desire for parental approval and a need for self-realization, this does not as often seem true of the lower class child. Perhaps any form of reinforcement which is valued by the individual holds a greater potential for motivation in the child who is socially and culturally disadvantaged and thus has a greater unmet need for approval.

The problem of the low socioeconomic class child is of particular interest to research today, but psychologists have contributed little to the understanding of the motivational problems of disadvantaged children (Katz, 1969). There is a need for a consequential means of approaching deficiencies that result from a limited environment. Increased extrinsic motivation may be instrumental in aiding the disadvantaged child to attain a higher level of experiential and cognitive growth. Hawk (1968) maintains that there is enough evidence to warrant giving instructions in the principles and practice of reinforcement theory to teachers of disadvantaged children, as this may be the major avenue through which these children learn. However, the role of verbal reinforcement as it
applies specifically to the child from a lower socioeconomic class has been neglected.

No agreement exists on the type of extrinsic reinforcers that motivate children to increased performance in a given task, and the question regarding positive versus negative verbal reinforcement has yielded several conflicting reports. There is no clear indication whether praise or reproof is more valuable as a motivating force. The role of the experimenter's attitude as a factor in motivation is another area of concern in which inconsistencies are evident. "Attitudes of teachers, if they are influential to school achievement and motivation, if they are negative to the children in our schools, must be changed..." (West, 1969, p. 93). But so little research has been done on this question that no conclusions can be drawn.

Objectives

The purpose of this study was to further explore the question regarding the type of extrinsic motivation, in the form of verbal reinforcement, that is most influential in increasing the young child's performance. The study dealt specifically with the differential effects of positive and negative verbal incentives, as well as expressions of attitude by the researcher, on performance of low and middle socioeconomic class children.

Hypotheses

Three hypotheses were tested during the course of the present study:

1. There is no difference with respect to motivating effect of positive and negative verbal reinforcers on the performance of young children.

2. There is no difference with respect to motivating effect of
positive and negative attitude of the researcher on the performance of young children.

3. There is no difference with respect to socioeconomic level in the relative effectiveness of positive and negative verbal or attitudinal reinforcement on the performance of young children.

Operational definitions

Terms used in the present study were defined as the following:

Motivation: the way in which behavior gets started, is energized, is sustained, is directed, is stopped, and the type of subjective reaction present in the child while these things take place (Jones, 1955);

Reinforcement: any stimulus that increases the likelihood of the response;

Verbal incentive: a statement by the researcher or teacher that serves to motivate a child; positive words such as correct, right, good; negative words such as wrong, poor, incorrect; praise, approval, reproof, disapproval, criticism; verbal reward or punishment;

Positive: that which is affirming; denotes researcher approval or liking of the subject;

Negative: that which is negating or denying; denotes researcher disapproval or disliking of the subject.
Relative values of positive and negative verbal incentives

In reiterating a series of studies on the influence of praise and reproof on learning or performance, one author has summarized the problem as follows:

...in comparison with neutral motivational conditions, material and prestige incentives... have a facilitating effect on learning. Material rewards tend to be more efficacious than verbal praise... Although praise is generally considered a more efficacious motivational agent than reproof, some investigators have obtained equivocal findings on this point. (Ausubel, 1958, p. 574)

It is apparent, then, that verbal incentives have some value as motivating factors, but the relative influence of praise versus reproof seems undetermined. In 1966, Allen indicated that large numbers of studies have been done on the effects of positive and negative social reinforcement on children's performance, but it is not yet clear whether approval or criticism is more effective in modifying performance. The inconsistency in research findings on this topic was noted as late as 1970 by Paul Spear, who wrote "...results from investigations on the effects of adults' comments, usually some form of approval or disapproval, on children's learning... have been discrepant" (Spear, 1970, p. 124).

Several studies have found no significant difference with respect to relative values of praise and reproof as motivators. One of the first important studies on motivation of young children (Hurlock, 1924) involved administration of the National Intelligence Test to grade school children in order to determine the effects of praise and reproof on performance. The author found praise and reproof to be of approximately the same value.
but noted that differences do exist according to sex and age. Another study by Hurlock (1927) showed that incentives in the form of praise or reproof raised average I. Q. scores seven points, while practice alone resulted in an increase of less than one point. In a further investigation of the influence of various external incentives on the performance of tasks by preschool children (Chase, 1932), results indicated that, for the particular study, absence of any external incentive was a deterrent to improvement of performance; praise or reward incentives both tended to increase performance, with material reward more effective than praise; and the addition of either reproof or punishment was stimulating, with evidence being in favor of reproof. Finally, a study (Grace, 1948) attempting to relate personality characteristics of children and their responses to positive or negative statements failed to find any significant difference between praise and reproof in terms of their effectiveness as motivators.

However, other work in the area of praise and reproof has uncovered evidence in favor of praise. Within her research report, Chase (1932, p. 23) quoted Nelson's study on the effects of favorable response by the tester, stating that "In one-third of the total number of cases ... the amount of praise given in each of three trials definitely corresponded with the degree of success in the trial, as measured by the time and error scores." In a study that investigated the effects of verbal urging and praise upon rotary pursuit performance of mentally defective children, Ellis and Distefano (1959) found praise to be more effective than the neutral or negative conditions. Stevenson and Snyder (1960) obtained similar results in their work with the effect of previous conditions on response to various incentives. An additional study to determine the relative influence of praise and reproof on elementary school children
(McManis, 1966) showed praise more favorable than reproof in increasing the rate of performance. More recently, in a study of the influence of positive and negative social reinforcement on the achievement behavior of fourth grade boys (Stein, 1969), praise produced higher rates of response than disapproval. And in 1970, Spear provided additional evidence that criticism results in a slower rate of response than either praise or a neutral condition.

In contrast to research in which praise was found to be the more motivating reinforcer, a number of studies have reported that a combination of verbal approval and disapproval, or disapproval alone, tends to be more effective as a reinforcement condition. These studies found that praise alone tends to be, relatively, the least effective condition. In a replication of Chase's investigation into the influence of external incentives, Anderson and Smith (1933) found that performance of preschool children was significantly higher when they were reproved for failure than when they were praised for success. Buss and Buss (1956) explored the effects of verbal reinforcement combinations on conceptual learning of psychiatric patients and found that making negative reinforcement contingent upon wrong responses increased learning rate more than the use of positive reinforcement with correct responses. Brackbill and O'Hara (1958) compared the relative effectiveness of reward and punishment for discrimination learning in kindergarten children and found that learning occurred significantly faster for the combined approval and disapproval group than for the approval-only group. In 1959, Gewirtz investigated children's preferences for a series of problem-solving tasks as a function of reinforcement conditions; negative reinforcement was found to produce a more influential effect on choice of task. A replication (Curry, 1960) of Buss' and Buss' experiment on combinations of verbal
reinforcers provided additional evidence that praise with reproof is more effective than praise alone. Two studies (Meyer and Seidman, 1960; Meyer and Seidman, 1961) dealing with relative effectiveness of reinforcement combinations on concept learning at different developmental levels showed that negative reinforcement for incorrect responses was superior both to positive reinforcement for correct response and to a combination of positive and negative reinforcement in facilitating learning.

Meyer and Offenbach (1962) found verbal punishment to be superior to verbal reward in a discrimination learning task. Kelly (1962), in his examination of the behavioral characteristics of the experimenter and relative effectiveness as a reinforcer, found further evidence that children receiving negative social reinforcement performed at higher rates than those in other conditions. In a study (Crandall, 1963) to determine if adults' nonreactions acquired reinforcing properties of their own, results indicated that negative experimenter reactions had a greater reinforcing potential than positive experimenter reactions. Vega's research (1964) into the effectiveness of the experimenter as a function of race disclosed a similar increase in performance under conditions of reproof. His explanation was that avoidance of criticism is a more powerful motive than attainment of approval, due to differential expectancies of children concerning probable consequences of both social reinforcers. Children are generally rewarded less following praise and punished more following reproof. Results of a doctoral dissertation (Sullivan, 1964) indicated that although verbal reward as a reinforcer increased in effectiveness with increasing age, verbal punishment was the most effective condition at all age levels. A study involving the performance of kindergarten children on a simple motor task (Kelly and Stephens, 1964) reported
that the highest operant rates during acquisition and extinction occurred under criticism conditions. Finally, a study investigating the possible interaction of experimenter variables with social reinforcer effectiveness (Montanelli and Hill, 1969) found that children's performance increased more under conditions of criticism than those of praise or non-reaction.

**Interaction of verbal incentives with intervening variables**

"The effectiveness of a social reinforcer is not only a function of reward or punishment" (Horowitz, 1963, p. 281). The age of the child, his sex relative to that of the experimenter, his history of reinforcement experiences, and the amount of information provided by reinforcers are all factors relating to the effectiveness of verbal incentives.

Age and sex differences. Most studies seem to indicate a differential effect with respect to verbal incentives before and after age five. In other words, preschool children respond differently. In her pioneering study of the motivational effects of praise and reproof on the performance of grade school children, Hurlock (1924) found both reinforcers to be of approximately the same value. However, she noted that older children responded more to either type of verbal reinforcement than younger children. Concerning mental age, some form of incentive seemed more fundamental for "superior" than "inferior" children; praise was found to be somewhat more effective for "inferior" children, while reproof produced better results with "superior" children. Hurlock also indicated that boys increased performance more than girls as a result of praise or reproof. Characteristically, girls responded better following praise, boys following reproof. However, a more recent study (Montanelli and Hill, 1969), failed to find a significant interaction between sex of the experimenter, sex of the
child, and social reinforcement conditions as determiners of performance.

Meyer and Offenbach (1962) discussed the possibility that children of kindergarten age depend more on adult evaluation of their performance than on their own evaluation. Thus, no conflict results between their perception of performance and that of the experimenter, and they respond to social reinforcers directly in terms of the experimenter's comments. Older children, on the other hand, evaluate their own performance and derive their motivation from the discrepancy between their evaluation and the experimenter's evaluation. Whenever this discrepancy exists, such as when a child feels he is doing well but is negatively evaluated by the experimenter, the child strives to increase his performance. If he is satisfied with his performance and reinforcing statements are consonant with his perception, he may stop responding.

Horowitz (1963) reported a study of the relative difference in performance under buzzer and social reinforcement conditions in which preschool children were found to respond more to the buzzer reinforcement. Children in the first through fourth grades performed better under conditions of social reinforcement, but by fifth and sixth grades, there was no difference. In the same study, Horowitz indicated a further difference, that older children seemed to perform better under conditions of reproof or disapproval while praise or a combination of praise and reproof was more effective with the young child. In his doctoral dissertation on the effects of verbal reward and punishment, Sullivan (1964) found differential responsiveness of children to verbal incentives. Verbal reward was not as effective as punishment before the age of five, but it increased in effectiveness with increasing age. Ailen (1966) summarized that studies with younger children (4-6.5 years) are often in disagreement, with some indicating that disapproving statements are more effective
and others indicating that approving statements are more effective. With older children (8-13 years), there is an indication that disapproval may be the more effective form of social reinforcement. In her study on the effects of verbal reinforcement on children's performance as a function of the type of task, Allen found praise more effective than silence or criticism in keeping younger children at a task. Older children remained longer when criticised than when supported or when the experimenter was silent. Another study (Spear, 1970) found more influence of approval or disapproval conditions on younger children than older children.

Previous conditions. In a study (Gewirtz and Baer, 1958a) concerning the effects of brief social deprivation on children's responses to social reinforcers, effectiveness of adult approval was reliably enhanced by a period of social isolation. Further, it was found that satiation with adult approval prior to the administration of social reinforcers made children less responsive. In another study, Gewirtz and Baer (1958b) found similar results, that social reinforcement was most effective after social deprivation and least effective after social interaction.

Stevenson and Snyder (1960) provided evidence that the effect of an incentive condition is influenced significantly by the type of conditions that precede it. When positive comments were received during the first administration of experimental procedure, effects of incentive conditions in the second administration were minimal. Continuation of reward resulted in slightly increased performance, but a decline in performance did not result under neutral or punishment conditions.

It appears that once the experimenter has established a relationship with a child by means of positive comments about his performance, the introduction of a neutral or punishment condition does not
disturb the child's performance to so great a degree as it does in conditions where such a relationship has not been established. (Stevenson and Snyder, 1960, p. 9)

The highest rate of response found in this study occurred when conditions were neutral in both test administrations. The authors felt this indicated that children were striving for some response from the experimenter and became highly motivated when he continued to provide no response.

Berkowitz, Butterfield, and Zigler (1965) found that when a child has had a positive experience with an adult, he is more responsive to the social reinforcers dispensed by the adult.

Informational component. A study (Binder, McConnell, and Sjoholm, 1957) of verbal conditioning as a function of experimenter characteristics found no conditioning effect when the experimenter said "good" after correct responses, but it noted a significant effect when "right" and "wrong" were used as reinforcers. This indicated that person-oriented statements such as "good" or "you're doing well," while reinforcing to a degree, were not as effective as task-oriented statements denoting correctness of the response. Sechrest (1962) found that positive vocal feedback providing information concerning the correctness of their responses was the most effective means of motivating young children in the classroom. In a study dealing with the effectiveness of verbal reward and punishment as a function of task complexity (Meyer and Offenbach, 1962), punishment was found to be superior to reward in a discrimination learning task only when there were more than two irrelevant dimensions in the stimuli; the explanation given was that reward and punishment have different informational properties. Reward for a correct response provides ambiguous information concerning correct response sets and no information as to incorrect sets. However, punishment for an
incorrect set results in the elimination of the punished set, therefore narrowing the learning task.

Another study on the influence of social reinforcers (Stein, 1969) reported that children performed at a higher rate under praise conditions than under "correct" conditions. Stein suggested that the effect of positive reinforcement on achievement behavior involves more than just providing information about whether a child is performing correctly. She indicated that the need is for person-oriented approval rather than merely task-oriented approval. In his investigation of motivational effects of praise and criticism, Spear (1970) attempted to explain the discrepancy of research findings in terms of task-oriented versus person-oriented reinforcers. Since "right" (correct) and "wrong" (incorrect) combinations and "wrong" alone tend to be more effective than "right" alone, the effectiveness of a verbal reinforcer appears to be influenced by the degree to which it provides information or knowledge of results to the child.

**Classroom investigation of verbal incentives**

As early as 1947, Witty analyzed children's listings of what a helpful, effective teacher should be and found "use of recognition and praise" mentioned frequently by children at age levels from two to twelve years. Considerable research has been done in the actual classroom situation on differential values of praise and reproof as motivators. Donald Baer and Montrose Wolf began in 1963 to develop a program of research "aimed at demonstrating the potential for social reinforcement implicit in the ordinary behavior of the preschool teacher directed toward her children" (Baer and Wolf, 1968, p. 119). A particular experimental design was devised to evaluate the reinforcing effect on child behavior of the
teacher's normal social responses. The controlled variable in such research was not what a teacher did, but when she did it—positive social reinforcement was made contingent upon the preferred response or desired behavior of the child.

The first study to employ this design (Harris, Johnston, Kelly, and Wolf, 1964) was one in which teacher attention and approval completely reversed a child's regressive behavior within one week. Similar results were obtained in several studies, including one (Foxwell, Thompson, Coats, Baer, and Wolf, 1966) in which an extremely adult-oriented child was positively reinforced for child-oriented responses and eventually assumed a normal orientation. In a project that combined regular teaching duties with research procedures, Harris, Wolf, and Baer (1967) obtained consistent results in the application of positive reinforcement to appropriate social behavior in young children. Such reinforced behavior rose rapidly to a high rate, while the children's previous, less desirable, behavior declined.

Thomas, Becker, and Armstrong (1968), in a study of the varying effects of a teacher's behavior on performance, concluded that teacher approval serves as a positive reinforcer in motivating appropriate classroom behavior and that teacher disapproval serves to increase disruptive behavior. Another study (Madsen, Becker, and Thomas, 1968) undertaken in an urban ghetto school provided evidence that positive reinforcement contingent upon desired behavior resulted in an increase of such behavior, while disruptive behavior, virtually ignored, significantly decreased. A replication of the Madsen et al. study (Lorr, 1969) found that a combination of disapproval and praise was more effective than merely making praise contingent upon desired classroom behavior and ignoring undesired behavior. However, the optimum level of effective teacher behavior was one of low disapproval and high praise. Although it is suggested that teachers will seldom apply such a
ratio, Madsen (1969) advocated a 4:1 praise--criticism ratio to obtain maximum task attention.

Rosenthal, Underwood, and Martin (1969) described an experimental program in early childhood education in Tucson, Arizona, that was assessed as to comparative effectiveness of motivational practices. They reported that by reference to conventional classrooms, their program of high teacher approval and low teacher disapproval had successfully attained its motivational goals. Greater incidence of student solicitation of teacher attention was recorded. Another study (Brown, Payne, Lankewich, and Cornell, 1970) found that a higher ratio of praise than criticism yielded a greater number of student responses in the classroom, thus indicating that the positive reinforcing situation increases student motivation. Research (Reimanis, 1970) to determine the effect of altering the classroom approval/disapproval ratio supported the prediction that a decrease in approval would result in a decrease in achievement motivation. In addition, Howe (1970) reported that a decrease in the level of negative verbal reinforcement in the classroom yielded a decrease in deviant behavior.

Effects of the experimenter on social reinforcement

Modern day psychologists stress the importance of interpersonal aspects of the experimenter (E)--subject (S) relationship. According to this viewpoint, the experimenter is a variable and must be considered since S's responses are influenced by E's physical and behavioral characteristics (Binder, McConnell, and Sjoholm, 1957). According to Binder et al., most subjects were unable to verbalize the relationship between their responses and the reactions of E, thus indicating learning without awareness. However, in an interview with 128 school-age children concerning
motivational techniques of their teachers, Sechrest (1962) reported that children were aware of, and responsive to, their teacher as a person. He found that kindergarten children tended to be less aware of their teacher, but remarks about teacher personality increased with increasing grade level. Zigler and his colleagues have asserted that "the typical experimental situation in which an adult verbally reinforces a child must be viewed as a complex interaction between adult and child" (McCoy and Zigler, 1965, p. 604). These authors have argued that the history of every child is such that any adult elicits both a positive (approach) and negative (avoidance) reaction tendency. Thus, every interaction between an adult and a child should be viewed as a conflict situation for the child. He might not be unmotivated by social reinforcers, but he could have a strong negative-reaction tendency that prohibits him from freely responding in order to secure positive reinforcement.

There is considerable evidence that different experimenters have different effects on children and their performance. In a study to determine if two E's with different physical and social characteristics would produce different rates of learning in S's, Binder, McConnell, and Sjoholm (1957) predicted that learning rate was a function of E characteristics when E used only simple word reinforcement; their hypothesis was supported. Stevenson (1961) studied social reinforcement of children as a function of chronological age, sex of E, and sex of S and found that different Es using identical reinforcement procedures had different impacts on children. One study (Kelly, 1962) examined the relationship between behavioral characteristics of an individual and his effect in manipulating the behavior of a child through verbal reinforcement. The results stated that there was no difference in rate of response to social reinforcement as a function of the character of E. However, a few years later another study (Rosenhan
and Greenwald, 1965) reported finding a significant difference in children's responsiveness to verbal reinforcement administered by different Es. In 1970, Leventhal and Fischer attempted to discover if influence in a social reinforcement situation is attributable to social rewards or is a result of subtle cues in E's behavior. Using the marble-in-the-hole game, the authors found large differences in expressive behavior among different Es, in spite of their training. Significant differences were evident in the effect of different Es on children's performance rate and hole preference as well. One major conclusion was "...that the S and the E are joined in a complex interpersonal task" (Leventhal and Fischer, 1970, p. 91). Further evidence of the effect of different Es on the performance of children despite training to eliminate differences was reported in Spear's study (1970) on the motivational effects of praise and criticism.

Expressive behavior. Many types of behavior and personality characteristics are related to the experimenter's effect as a reinforcer. Leonard Krasner's research (1955) into relevant variables in the therapeutic interview situation exposed a wide variety of experimenter stimuli that are effective secondary reinforcers: gestures, smiling, nodding, leaning forward, as well as verbal incentives. Krasner said the experimenter, "...if only by his presence in the same room, indicates that he is interested in the S..." and this interest acquires a reinforcing effect. In 1956, Hildrum and Brown reported results of work by Greenspoon (1951) and Taffel (1952) that provided evidence of the reinforcing effect of simple verbal utterances such as "mm-hmm." Along with verbal cues, the authors indicated that "...in a face to face conversation there are many ways of communicating agreement or disagreement - smiles, nods, averted eyes" (Hildrum and Brown, 1956, p. 109). Another study (Binder, McConnell, and Sjoholm, 1957)
confirmed the finding that "mm-hmm" is an effective reinforcer. Sapolsky (1960) explored the possibility that the amount of "attractiveness" E communicated to S would determine his effect as a verbal reinforcer. The hypothesis that E would exert more conditioning influence on an attracted than an unattracted S was confirmed.

Rosenthal (1964) claimed that a variety of factors, such as E's expectations and expressive acts, influence experimental results. In a volume on experimenter effects in behavioral research, Rosenthal (1966) characterized the effective reinforcing agent as an interested, liking, personal, and relaxed person. He went on to present research on other behavior variables that might alter the reinforcing potential of E, such as hostility, authoritarianism, intelligence, birth order, status relative to S, warmth, and anxiety.

In 1970, Leventhal and Fischer investigated whether words or expressions reinforce in a social reinforcement situation. Their study attempted to identify meanings communicated by expressive actions and to clarify the means by which these influence behavior. They tested the effect of E not attending to the testing situation, as well as effects of praise and neutral conditions, and found that E's behavior influenced the emotional state of S, thus affecting his rate of response. Differences in response rate occurred during the baseline period before reinforcing conditions began; therefore, reinforcement was not responsible for the difference. The authors concluded that expressive acts were significant in communicating the task and social orientation of E to the Ss.

Attitude. In his discussion of the various experimenter stimuli that act as effective reinforcers, Krasner (1955) indicated that listening and showing an attentive attitude on the part of E "...is a basic and indispensable variable" (Krasner, 1955, p. 21). Ausubel (1958) suggested that,
in considering relative values of forms of verbal reinforcement as motivators to increased performance, much depends on the personality and the attitude of the administering individual. A study of responsivity to verbal conditioning as a function of emotional atmosphere (Weiss, Krasner, and Ullman, 1960) supported the prediction that a hostile experimenter attitude would decrease the effectiveness of conditioning. Marder (1961) found that a group of Ss confronted with E in a negative role responded less to verbal conditioning than those confronted with E in a positive role.

Reece and Whitman (1961) defined "warmth" and "coldness" in a study of expressive movements: a warm attitude is indicated by the experimenter leaning toward S, looking at him, smiling, with his hands still; a cold attitude involves E leaning away from S, looking around the room, not smiling, and drumming his fingers. Findings in the study were that warm reinforced groups produced the greatest number of verbal responses and that nonreinforced warm groups produced more responses than cold groups. Further research into warmth and its influence on verbal reinforcement (Reece and Whitman, 1962) found that climate was an effective variable and that the interaction of warmth and positive verbal reinforcement was the most facilitating condition. Verbal reinforcement alone was not a significant influence on the number of responses. The authors reported that expressive movements were not mere manipulations by E but conveyed his attitude to the S. In her doctoral study, Fowler (1962) investigated teacher attitude, teacher-pupil rapport, and emotional climate in the elementary classroom. She found that personality characteristics and teacher attitudes are related to pupil behavior and significantly influence classroom climate.

Rosenberg (1965) suggested that the experimenter may communicate
either an evaluative or task-centered attitude, or an emotionally accepting and supportive one. Either attitude influences the emotional state of S and affects his rate of performance. In a study of social reinforcement effectiveness as a function of the relationship between child and adult, McCoy and Zigler (1965) found that the most effective E was warm, involved with the child, and established a positive relationship. Rosenthal (1966) characterized an effective reinforcer as interested, liking, and personal, all expressive of positive attitude on the part of E toward S. A doctoral study (Engram, 1966) investigated the effects of cold and warm experimenter attitude on verbal productivity of Ss and produced significant differential effects. Stevenson and Allen (1967) indicated similar findings. They reported that the more effective Es are relaxed, sociable, and warm, and that "...supportive statements are more effective in influencing performance when they are made by individuals perceived as being nurturant, involved, and nonthreatening" (Stevenson and Allen, 1967, p. 262).

Another research team (Allen, Spear, and Johnson, 1969) studied the effects of the experimenter's personality characteristics on children's task performance and found that the subjects responded at higher rates to experimenters judged as "warm" rather than "cold." Most studies indicate that a positive attitude on the part of E facilitates effectiveness of social reinforcement. However, a recent study (Lepper, 1970) found that under high anxiety an E with whom a negative interaction had occurred was a more effective reinforcer. Under low anxiety, the E with whom a positive interaction occurred was more effective.

Expectation factor. In 1962, Martin Orne said that S's behavior is a function of the experimental variables as well as demand characteristics of the situation. He showed that certain features of the experimental
situation may cue the subject to the desired response. Rosenthal (1964) outlined a variety of factors, such as E's expectations and expressive acts, that could influence experimental results in his paper on the experimenter as a variable in psychology research. He went on to report instances of experimenter bias in studies with both animals and humans. In 1966, Rosenthal emphasized further the importance of experimenter outcome-orientation bias, the notion that Es obtain data from their Ss that they want or expect to obtain. He characterized an effective biaser as interested, liking, personal, and relaxed; the same characterization was used to describe the effective reinforcing agent. In 1971, Dusek conducted research on experimenter bias in the performance of children at a simple motor task and found a significant biasing effect for girls, but not for boys. There was no evidence of interactions of E bias and reinforcement conditions for either boys or girls. He indicated that although experimenter bias has been shown in studies of verbal conditioning, few studies, none carefully controlled, have investigated the possibility of E bias with children, and no conclusions have been drawn.

Sex of experimenter. Gewirtz (1954) studied determinants of attention-seeking in young children and found that some experimenters are more effective than others as verbal reinforcers. He concluded that the influence of experimenters varies with respect to sex of E in relation to sex of Ss. In 1961, Stevenson found that social reinforcement from female Es had greater influence on performance of nursery school children than reinforcement from male Es. At ages six and seven, a significant cross-sex effect occurred in which female Es were more reinforcing for male Ss and vice versa. Stevenson reported that, generally, elementary school children performed at a higher level for adults of the opposite sex under conditions of positive social reinforcement. Horowitz (1963)
suggested that the greatest cross-sex effect is found between the ages of five and eight.

One study (Hill and Stevenson, 1965) found that performance occurred at a high level under E nonreaction from same-sex rather than cross-sex Es. Greater incentive value was found in positive social reinforcement from opposite-sex than same-sex Es. However, there seemed to be a greater potential for raising S's anxiety level and level of performance under conditions of nonreaction or criticism among same-sex Es than cross-sex Es. Another study (Rosenhan and Greenwald, 1965) on effects of age, sex, and social class on responsiveness to reinforcement failed to reveal any interaction in an analysis of variance with sex of E or sex of S. Recently, in an investigation of children's achievement expectations and performance as a function of reinforcement, sex of S, and sex of E (Montanelli and Hill, 1969), no significant interaction was found between sex of E or sex of S and reinforcement conditions.

Race of experimenter. Trent (1954) investigated the color of the experimenter as a variable and confirmed the hypothesis that color and race of E are significant in research with Negro children. Another study (Vega, 1964), on the performance of Negro children as a function of race of E and type of verbal incentive, found that differential effects of praise or blame as reinforcers on Negro children depend on the race of the experimenter. Negro children tested by Negro Es decreased their performance under all conditions, while those tested by white Es decreased performance under praise and no incentive but increased performance under reproof. Difference in response was attributed to anxiety of Negro children under a white experimenter.

Extensive findings from a study conducted by Allen, Dubanoski, and Stevenson (1966) indicate possible explanations for effects of the race
factor in research. A same-race effect was found, with Es of the same race as Ss producing a greater increment in response. Negro Es were more effective with white and Negro Ss, perhaps due to Ss being more motivated to respond to directions given by an adult who was unfamiliar. Rate of response to praise increased with the Negro E and decreased with the white E; the more familiar person was less effective as a social reinforcer. When no comment was made about their performance, Negro Ss increased performance more with the Negro E, and white Ss increased more with the white E. It seemed that adults of the child's race produced a higher level of anxiety than adults of another race when the adult remained unresponsive and unevaluative during S's performance.

A classroom study (Zach, Horner, and Kaufman, 1969), dealing with the problem of motivating children of another race than that of the teacher, illustrated the significance of the relationship and the attitudes of the teacher in motivating the pupil to increased performance and learning. According to a recent study (Brown, Payne, Lankewich, and Cornell, 1970), teachers in a "mixed" situation, where their race differed from that of their students, altered their praise—criticism ratio with respect to the social situation of the classroom. In an effort to avoid racial controversy, such a teacher would hesitate to criticize and would increase his proportion of positively reinforcing remarks. This attitude of attempted complacency on the part of the teacher towards racially different students resulted in a greater number of student responses and tended to motivate the students to more active participation.

Motivation as a function
of socioeconomic level

Hodges and Spicker (1967) reported that severely disadvantaged preschoolers, as compared with children of middle socioeconomic class,
not only exhibit deficits in general intelligence, language development, motor coordination, and cognitive growth, but also lack motivation. However, psychologists have contributed little to the understanding of motivation with respect to the disadvantaged child (Katz, 1969). In the 1967 Nebraska Symposium on Motivation, Katz cited McClelland's suggestion that low achievement motivation among lower socioeconomic class children is the result of failure in socialization processes in the home. Atkinson (1964) indicated that the tendency to approach success (need for achievement) is a result of positive motives of an instinctive nature, as well as a combination of fear of failure and perceived probability of success. In his paper on the implications of motivation for teachers of disadvantaged children, Epps (1970) said that self-esteem figures considerably in both areas. Lower class children lack self-esteem, thus, they develop a low perception of probability of success and a high fear of failure.

In a study of changes in I.Q. scores of culturally deprived children, Zigler and Butterfield (1968) argued that such changes reflect growth in three areas: (1) formal cognitive processes, (2) informational content, and (3) motivational factors. The authors indicated that the role of motivational factors in affecting I.Q. scores is evident when the culturally deprived child, with adequate storage and retrieval abilities, responds "I don't know" out of fear that has resulted from his negative experiences with strange and demanding adults. Zigler and Butterfield tested to find out how much change in I.Q. scores following a nursery school experience was due to motivational factors alone. They found that the significant difference in improvement in I.Q. performance between nursery school and non-nursery school children was attributable solely to motivational factors. The nursery school experience alleviated debilitating
motivational aspects, such as: culturally deprived children are more motivated toward securing the attention of adults and their praise than toward performing (Zigler, 1963); they are less motivated to be correct for the sake of correctness alone (Terrell, Durkin, and Wiesley, 1959); and they are willing to settle for lower levels of achievement success than middle class children (Gruen and Zigler, 1968). As a result, performance on the intelligence test was heightened by their increased ability to use their intelligence in a standard testing situation.

In trying to improve the deprived child's general level of performance, it would appear at least as important to attempt to correct his motivational inadequacies by developing nursery programs geared specifically toward changing his adverse motivational patterns as it is to concentrate on teaching cognitive skills and factual knowledge. (Zigler and Butterfield, 1968, p. 12)

Language factors affecting motivation. In the report of a study (1962) in Great Britain, Bernstein explained language differences of lower and middle socioeconomic class children in terms of two separate language codes: a "restricted" code for lower class children, and an "elaborated" code for middle class children. In the "restricted" code, meaning is transmitted through variations in extra-verbal signals, such as pitch, rhythm, and facial set or gestures, and little emphasis is on the actual verbal content. It appeared that lower class children were limited to the "restricted" language code, while middle class children possessed both. Bernstein said that Deutsch (1962) reported similar findings in New York City.

When Hess and Shipman (1965) investigated the influence of early experience of the development of cognitive modes in children, they found a lack of affective language use among parents in the lower socioeconomic class. Psychological concepts of feelings were present more often in the language of middle class adults. They also reported similar findings to those of Bernstein, that there were gross disparities in verbal output
and a difference in the quality of language used by middle class and lower class mothers.

Brooks, Brandt, and Wiener (1969) researched socioeconomic class differences in response to verbal reinforcers and found that lower class children respond only to tonally inflected positive and negative words, while children from the middle class respond equally to words alone or words with congruent tonal inflections. However, when tonal and other nonverbal cues were controlled, no differences existed between the two classes in their response to words connoting accuracy or praise. Further distinctions in the motivating effects of verbal reinforcement for children of different socioeconomic classes were noted. Lower class children responded more to positive words said with positive tone than to negative words said with negative tone, but middle class children responded equally to positive and negative words with congruent tonal inflections. Discrepancies were evidenced by the difference in response of lower and middle class children to incongruent word-tone pairings. The problem of tone of verbal motivators as related to socioeconomic class was the concern of another study (Kashinsky and Wiener, 1970). Findings indicated that the tone in which a set of instructions was presented determined the response of lower class children to the instructions. Their greatest responses resulted from a positive tone, while middle class children responded similarly to instructions presented in any tone.

Positive versus negative incentives. In her research into the relation of personality characteristics and response to verbal approval, Grace (1948) found that children responding best to negative reinforcement were socially maladjusted with school, family, and home difficulties. They were more submissive, introvertive, and emotionally unstable. Those children most influenced by positive statements were generally well-adjusted, outgoing,
Lower socioeconomic class children feel alienated and anxious when in a middle class school situation and with a middle class teacher and are unable to comprehend environmental expectancies. Thus, they rely on external indices of their performance (Rosenhan, 1966). Rosenhan defined this feeling of alienation as "lacking a relationship with one's environment" (Rosenhan, 1966, p. 255). Because praise is anxiety-reducing, such children should be more responsive to praise and more disrupted by disapproval. In his study investigating the effects of social class on responsiveness to verbal reinforcement, Rosenhan (1966) confirmed his predictions. Performance of lower class children significantly increased under approval conditions, while that of middle class children did not. Lower class children also significantly decreased their performance under disapproval conditions. He proposed that middle class children may be satiated by the numerous instances of verbal persuasion and penalty by parents in the home and do not respond as strongly to approval or disapproval as lower class children whose parents use physical punishment.

Another study (Fischer and Herschberger, 1968), dealing with variables related to performance under reinforcement conditions, found that children with low self-esteem improved more under criticism than did those with high self-esteem. Since, according to Epps (1970), the lower class child lacks self-esteem, this finding could have great implications for the teacher of disadvantaged children.

Person- versus subject-oriented incentives. A report (Zigler and Kanzer, 1962) on the influence of verbal reinforcers on performance of middle class and lower class children indicated that "correctness" reinforcers (right, correct) were more effective with middle class children, whereas
"praise" reinforcers (fine, good) increased performance of lower class children. This may be related to the lower class children's need for nonverbal components, since praise more invariably will carry tonal inflectors, and correctness need not. The authors added that the reinforcer typically used to motivate middle class children, knowledge of correctness, was not effective with lower class children. Zigler and Kanzer postulated a developmental hierarchy of reinforcers. They proposed that lower class children are developmentally behind middle class children; thus, they are more influenced by expressions of affection and praise (person-oriented social reinforcers) that are effective in early developmental stages. In the final stages, a child is more concerned about being right for right's sake than he is about receiving adult approval; thus, "correct" and "right" are more effective. Rosenhan and Greenwald (1965) replicated the Zigler and Kanzer study and found no difference between lower class and middle class children in their responsiveness to praise reinforcers versus correct reinforcers.

A study (Spence and Segner, 1967), dealing with verbal combinations of correctness reinforcers and their differential effects on children from two social classes, found only minor performance differences at each level. In the study, conditions under examination were: "right" reinforcement for a correct response and nothing for an incorrect response; nothing for a correct response and "wrong" for an incorrect response; and "right" and "wrong" for correct and incorrect responses. A similar study (Spence and Dunton, 1967) reported that lower class preschool children did not perform as well under the "right--blank" or "wrong--blank" combinations as they did under the "right--wrong" combination.
Material versus verbal incentives. Zach, Horner, and Kaufman (1969) noted that several studies have shown tangible rewards to be more effective reinforcers for disadvantaged children. In a study of incentives and social class, Terrell and Durkin (1959) reported that a nonmaterial incentive was as effective as a material incentive for middle class children but not for lower class children. They summarized that middle class children are more likely to learn for learning's sake. Another study of social class and success strivings (Douvan, 1959) found that middle class children performed as well under abstract reinforcement as under material reinforcement, while lower class children did much better under material reinforcement. She suggested that middle class society places a greater emphasis on accomplishment and imposes earlier demands; thus, there is a general achievement need among children from middle class homes that does not develop among disadvantaged children.

There are two theories that attempt to account for poor test performance of lower socioeconomic class children: (1) that they have undergone early and intensive deprivation to the extent that they cannot perform well; and (2) that public schools are oriented toward middle class children with emphasis on intrinsic rewards, but lower class children are not motivated to perform for these rewards (Higgins and Archer, 1968). The literature of professional education recommends eliminating all material incentives because of their extrinsic relationship to learning activities and their detraction from the real goals of learning (Hawk, 1968). In an effort to determine if, in fact, extrinsic rewards are more effective in motivating lower class children, Higgins and Archer (1968) conducted a study that contrasted traditional rewards such as praise and grades with material incentives such as
candy and money. The lower class children performed significantly better when offered extrinsic rewards than when offered the more traditional ones. However, extrinsic rewards did not significantly improve performance of upper socioeconomic class children.
METHODS AND PROCEDURES

Sample

A purposive sample was used in the present study and was drawn from two separate populations, each distinguished by socioeconomic level. One population consisted of 80 middle socioeconomic class children enrolled in the Child Development Laboratory of Utah State University during Spring Quarter of 1972. The researcher's schedule necessitated establishing a morning test period. Therefore, the middle socioeconomic class subjects in the study, hereafter designated Sample I, were taken from the East Morning and West Morning laboratory groups. However, three boys and three girls from these two laboratories were either absent for prolonged periods of time or were too timid to participate, so they were not included in the study. These six children were replaced by children chosen at random from the East Afternoon laboratory. The Child Development Laboratory is a center of learning for children between the ages of three and five years, and for teachers in early childhood education and child development. Twenty children attend each laboratory four days a week for two and one-half hours. Student teachers plan a curriculum and arrange the environment in order to stimulate growth of each individual child in the areas of cognitive, emotional, social, and physical development. For the teachers themselves, the laboratory experience provides further understanding of young children's needs and capabilities, as well as an opportunity to practice and learn appropriate techniques for teaching and working with preschool children.

The second population, numbering approximately 60 children of lower
socioeconomic class, was comprised of the Head Start programs in Millville and Honeyville, Utah. The majority of children in the study from the lower socioeconomic class, hereafter designated Sample II, was enrolled in the Millville Head Start program. In order to supplement those children and obtain a total of 40 subjects in Sample II, several children from the Honeyville Head Start program were tested. Project Head Start is a federal program that provides an enriched environment for the preschool child from a disadvantaged background. Teachers in the Head Start classroom also strive to promote growth in all areas of the child's development: emotional, social, cognitive, and physical. Greater emphasis is placed on the cognitive area, however, in an attempt to alleviate problems caused by possible deprivation of intellectual stimulation in the home.

A total of 80 subjects, 40 from each of the two socioeconomic levels, comprised the final sample. The two portions, Sample I and Sample II, were selected to contain equal numbers of male and female subjects (20 each), but no provision was made to match the subjects by age since all children were between the ages of three and five years.

**Description of the instrument**

In this study, the effects on children's performance of positive and negative verbal reinforcement and attitude of the researcher were assessed by scoring the number of pegs each child put into a pegboard during a 60-second time interval. Comparisons were then made of each child's scores on two successive trials.

The wooden pegboard measured 16 inches by 16 inches and accommodated 100 pegs, each 5/8" in diameter. Unlike other pegboards that consist of a shallow piece of wood with drilled holes into which the pegs are inserted,
the instrument was a hollow structure with a depth of one inch. Holes were cut in the upper surface of the board, and pegs, once inserted, could only be removed by lifting them out. This type of pegboard was chosen to eliminate the problem of pegs falling from the holes after insertion. The stability of a deep pegboard, along with the size of the pegs (5/8"), facilitated manipulation of the instrument by the children.

The aesthetic design of the pegboard must be mentioned since it became a significant factor in the responses of some children to the instrument. The board was a natural finish wood, but the pegs were four different colors: red, yellow, blue, and green. In addition, each peg had a white dot painted on one end to designate the "top" of the peg. Various responses of children to the colors and dots will be considered in the Discussion chapter.

Pegs were arranged in the board in a particular design, with vertical rows of color-matched pegs. When the instrument was presented to the child, half of the pegs were removed and the portion of the board to be used in the testing was indicated as appropriate for manipulation.

Setting

The Child Development Laboratory at Utah State University provides an ideal environment for young children. Located on the ground floor of the Family Life Building, the classrooms are spacious and have large windows along the entire southern wall to provide excellent natural lighting and ventilation. Permanent equipment in both rooms includes open toilet facilities, child-sized tables and chairs, lockers for each child, one large piece of climbing equipment, shelves for small manipulative materials such as puzzles, pegboards, science experiments, perception games, et cetera, and a rug area with a piano and record player. Student
teachers rearrange the rooms each week and provide additional learning centers in accordance with their teaching plans. Large muscle toys and unit blocks are also brought into the rooms by student teachers, as well as pictures, books, and records. Immediately outside the laboratory, an enclosed play area is available to the children, with climbing apparatus, sliding boards, and other outside activities.

Physical facilities differed in the Head Start classrooms. All three rooms were located in old but remodeled school buildings, and all were large, inviting, and cheerful. Equipment similar to that in the laboratory was provided for the children and changed regularly by the teachers. Adjacent to each building was an outside play area that enabled the children to enjoy large muscle activities.

Although the physical setting of the test situation itself also varied in the Child Development Laboratory and in the Head Start programs, the researcher maintained environmental equivalence whenever possible. Testing of children in the laboratory was done in a room designated for such research. The room was familiar to the children and was located in the vicinity of their classrooms. Except for a child-sized table and chairs used for the actual testing, no other furniture was added to the room which contained a bench, small table, and standard sink. Lighting was good, and one window in the room provided sufficient ventilation. The door was closed and posted so that no interruptions occurred during testing.

The Millville Head Start children were tested individually in their respective classrooms while other children and the teachers were outside playing; the door was closed and no interruptions occurred. With permission of school personnel, the researcher tested Honeyville Head Start children in the school library when it was not in use. Due to the adult size of
the library furniture, testing was done with researcher and child seated on the carpet in order to assure easy manipulation of the instrument by each child.

Because active involvement was required of each child as he performed the designated task, the researcher did not feel that differences in physical setting were of significant importance. Children in the Child Development Laboratory and those from the Honeyville Head Start program were not tested in a room that contained toys and equipment, however, those in the Millville program were. This factor was of minimal concern to the researcher since the Millville children were quite familiar with their room and were not at all distracted by its contents. It was important that the actual testing procedure be uniform for each sample and for all subgroups within the samples, and considerable care was taken to ensure such uniformity.

Pilot study

Before the actual testing began, a pilot study was conducted to ascertain the effectiveness of the procedure. Six children from the West Afternoon laboratory were used as subjects. The procedure remained fundamentally the same after the pilot study was completed, but several changes were made in an effort to provide clearer instructions to the children and to ensure validity of the results. For example, an electric timer was to have been used as a timing device and as a means of informing the children when the 60-second test interval was over. However, the children were too interested in the timer, and they competed against it to a great extent. Some wasted several seconds looking up from the task to check on the timer. Consequently, a stopwatch was substituted as a less obtrusive timing device.
A flexible plastic pegboard with narrow (1/4") wooden pegs was originally chosen as the instrument. It proved to be an unsuccessful measure of motivation in the pilot study because, as they became highly motivated by the researcher's reinforcing comments, the children began to have difficulty manipulating the narrow pegs into the holes. Several children knocked pegs over because they persisted in placing all the pegs in a straight line on the board, into holes which were quite close together. In addition, if the children applied too much pressure as they put the pegs into the holes, the board would flex and spring upward as the child released the pegs, sending them in all directions.

It was found that the instruction to "put as many pegs as you can in the board" was not sufficiently clear for all children. Therefore, it was changed to "put the pegs in as fast as you can."

Some children in the pilot study were confused by the dots on the pegs, different colors of pegs, and even by the task itself. It became necessary to demonstrate putting pegs in the board by using both blue and green pegs, placing the dots up or down, or both, and placing pegs anywhere on the board. In the actual study, each child was asked to repeat the demonstration with several pegs so the researcher could be sure that he understood instructions.

Test administration

The test was administered in two separate procedures. The first procedure was to subdivide each sample of children into three groups. A child was told by the researcher that it was his turn to play a special game and that he should accompany the researcher to the nearby "game room." (In the case of Millville Head Start children, the child was told that he should go inside to play the game.) He was assured that he could
return to the group after playing with the researcher, and if he seemed
frightened, he was urged by his teacher who indicated that she approved
of the experience. When a child refused to go with the researcher, he
was told that he could wait until another time, but that then he would
have to go. Once the initial invitation to leave the group was made
and the child agreed to go, the researcher repeated previously rehearsed
comments and instructions to each child in order to establish an informal
atmosphere and a positive feeling about the experience:

I'm glad you could come with me today, (name). We're going
into this game room; here is your chair. First, I want you to
tell me the colors of this toy (muffin tin with colored sections,
each containing colored pieces). What color is this? this one?
and this one? (praise child) And what color is your pretty dress?
(or nice shirt, boots, etcetera - this was done to further relax
the child) Now I'm going to take the pieces out, and I want to see
how fast you can put them in the right colored dishes. I'll use
my watch (show briefly to child) to tell you when to go and when
to stop; remember, when I say stop (not threatening, but lightly)
you have to stop! Are you ready? Go! (with enthusiasm)

During this part of the procedure, the researcher made as many reinforcing
or encouraging remarks as were necessary to motivate the child. The tone
of comments was one of challenge and excitement, and each child was
allowed the time he required to complete the task before "stop" was called.
It was important that the child felt positive about his efforts in this
preliminary test. When all the colored pieces were back in the dishes,
the researcher continued:

That is really good, (name), you did very well! Now I have
another game I want you to play. These are pegs, and this is a
pegboard. See how I have all the red and yellow pegs in the board;
I want you to put the green and blue pegs in. (demonstrating) You
may put them anywhere on the board that you want, and you may put
the dot up, or down, any way you want to. I'll use my watch again
to tell you when to go and when to stop. Work as fast as you can.
Are you ready? Go! (with enthusiasm)

The child was allowed only 60 seconds to work with the pegs and pegboard.
During this time, two reinforcing remarks were made: "That's right" or
"That's the way," as he began to put the pegs in, and another, "You're really doing a good job," after 30 seconds. When time was up and the child had stopped working, the researcher asked him to help count the pegs. The score was immediately recorded, and the researcher said:

\[ \text{## pegs! That's really good. I'd like you to help me take the pegs out now. I don't have any more games to play today, but I'd like you to come back another day and play with me. Thank you for helping me, (name).} \]

When this procedure had been repeated for all 80 children, the researcher arranged scores for Sample I and Sample II in separate frequency distributions. From these, scores were extracted and randomly distributed in four subgroups of each sample in such a way that subgroups with comparable means were obtained. The subgroups in the respective samples were then assigned at random to either a control condition or one of three experimental conditions. Experimental conditions were determined by the type of reinforcement and researcher attitude the group would receive during the second test administration. One child was removed from the subgroup in which he was randomly assigned (totally negative condition), due to the possible detrimental effects of negative reinforcement on his self-concept.

For the second procedure, the four subgroups within each sample, designated \( A_1 B_1 C_1 D_1 \) and \( A_{II} B_{II} C_{II} D_{II} \), received similar instructions that varied only to incorporate the experimental conditions of attitude expression and verbal reinforcement. Subgroups \( A_1 \) and \( A_{II} \) served as control (C) groups, receiving merely a repetition of instructions from the researcher in a neutral tone. The other subgroups received positive reinforcement with positive attitude (P-P), negative reinforcement with positive attitude (N-P), or negative reinforcement with negative attitude (N-N). Each child was allowed 60 seconds to work at the task and was then asked to help remove and score the pegs before being returned to his laboratory classroom. Specific sets of instructions and reinforcing comments
for the subgroups were delivered in the following way:

A_I and A_{II} - Control

Thank you for coming with me again today, (name). Do you remember how to put the pegs in the pegboard? I'd like you to put the pegs in the board again for me. I'll use my watch and tell you when to go and when to stop. Remember to work as fast as you can. Are you ready? Go!

B_I and B_{II} - Positive reinforcement with positive attitude

Thank you for coming with me again today, (name). Do you remember how to put the pegs in the pegboard? You did such a good job last time and you put so many pegs in the board, I want to see how well you can do today. I'll use my watch and tell you when to go and when to stop. Remember to work as fast as you can. Are you ready? Go!

C_I and C_{II} - Negative reinforcement with positive attitude

Thank you for coming with me again today, (name). Do you remember how to put the pegs in the pegboard? You really didn't do very well last time; you didn't put many pegs in the board. But I think you can do better this time. I want you to try! I'll use my watch and tell you when to go and when to stop. Remember to work as fast as you can. Are you ready? Go!

D_I and D_{II} - Negative reinforcement with negative attitude

Do you remember how to put the pegs in the pegboard, (name)? You really didn't do very well last time; you didn't put many pegs in the board. I want you to try again. I'll use my watch and tell you when to go and when to stop. Work as fast as you can. Are you ready? Go.

Since the researcher had to interact as a negative person with the children in subgroups D_I and D_{II}, several changes were made in the treatment those children received. There was no initial greeting as in the other conditions, nor did the researcher smile at any time. Her voice tone was flat and negative and she sat back from the table, while in other conditions she leaned forward to show interest in the child's efforts. No reinforcement or encouragement was given during the test period. If a child hesitated or stopped working, he was told without enthusiasm, "You may keep working." Once testing was completed, each child was assured by the researcher that he "really did very well" and
that the testing was only a game. If the child remained tense and uneasy, the researcher initiated further conversation and a brief session of warm, personal interaction with the child before returning him to his laboratory or classroom.

Reliability of results

Reliability of the study results cannot be fully established. Providing evidence of reliability would have necessitated video taping of each individual test administration to establish consistency in performance of the researcher. Since this was impossible, the researcher made every effort to ensure equivalency of testing by being aware throughout the study of her responsibility to be consistent.

With reference to the literature already cited, research has shown that the experimenter is an effective variable in social reinforcement situations. Since this study dealt specifically with the reinforcing effectiveness of the researcher as a function of her attitude, careful control was made of those factors known to affect research results. No testing was done when the researcher felt harassed, depressed, or anxious. Nonverbal components of the testing procedure, such as facial set, gestures, and body posture, were held constant for each test administration. The researcher smiled, leaned forward with both hands on the table, and attended closely to each child's performance for the subgroups that experienced positive attitude. For subgroups receiving negative attitude, the researcher did not smile, sat upright in her chair, and never looked at the child's face.

Verbal components of the experiment, such as words, utterances, voice, and informational aspect of reinforcers, were carefully rehearsed and repeated precisely for each test administration. Verbal reinforcement
was given to each child in statements of both subject- and task-oriented approval in order to eliminate the possibility of differential response of the children to the two types of reinforcement. No additional verbal utterances such as "mm-hmm" were made during actual test administration. The tonal voice inflections of the researcher while giving the instructions and verbal reinforcement to each child were controlled through considerable practice.

Validity

There is no way of assessing the validity with which the study measured children's responses to positive and negative verbal reinforcement and the attitude of the researcher. The variables associated with motivation are numerous and complex, and they cannot be entirely controlled in any one experiment. Individual personality differences as well as the emotional state of the children were not reflected in the results. Social reinforcement history of the children was unknown; however, all children received comparable positive reinforcement experiences prior to measurement of the effect of reinforcers on their performance. In order to ensure equivalency with respect to the acquaintance of children with the researcher, time was spent observing and interacting with those in Head Start classrooms before testing began. (This was necessary since the researcher had previously participated in the Child Development Laboratory.) Personal involvement with all children prior to testing was not established in either sample, but approximately the same number of children in each situation knew and were known by the researcher.
ANALYSIS AND FINDINGS

Scoring and statistical analysis

Scoring was accomplished by an actual count of pegs in the pegboard at the completion of each successive trial. Records were carefully kept of preliminary and post-test scores for each child, as well as of any individual differences in patterning of the pegs. (See Appendix A.) Attention will be given to the latter in the chapter on Discussion.

After execution of the two trials was completed for children in the Child Development Laboratory (Sample I) and Head Start classrooms (Sample II), scores within the sample subgroups were compared. Increases and decreases in performance on the post-test were noted, and they are summarized as score changes in Tables 1 and 2.

Table 1 contains score changes for all children in the Child Development Laboratory according to the four reinforcement conditions. Data in Table 1 show that, in the control condition (subgroup A₁), five children increased their performance, four children decreased their performance, and one child made no change in performance. Under conditions of positive verbal reinforcement/positive attitude of the researcher (subgroup B₁), four children increased, three children decreased, and three children made no change. There were eight children who increased performance under conditions of negative verbal reinforcement/positive attitude (subgroup C₁); only two children decreased their performance under this condition. When both verbal reinforcement and attitude of the researcher were negative (subgroup D₁), three children increased, six children decreased, and one child made no change.
<table>
<thead>
<tr>
<th>Subgroup A&lt;sub&gt;I&lt;/sub&gt;</th>
<th>Subgroup B&lt;sub&gt;I&lt;/sub&gt;</th>
<th>Subgroup C&lt;sub&gt;I&lt;/sub&gt;</th>
<th>Subgroup D&lt;sub&gt;I&lt;/sub&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Pos Reinforcement/</td>
<td>Neg Reinforcement/</td>
<td>Neg Reinforcement/</td>
</tr>
<tr>
<td></td>
<td>Pos Attitude</td>
<td>Pos Attitude</td>
<td>Neg Attitude</td>
</tr>
<tr>
<td>Charlotte</td>
<td>0</td>
<td>Amy +1</td>
<td>Angela +3</td>
</tr>
<tr>
<td>Cindy</td>
<td>+7</td>
<td>Michelle 0</td>
<td>Julie Ann +6</td>
</tr>
<tr>
<td>Jeanie</td>
<td>-3</td>
<td>Shireen -1</td>
<td>Jolene +3</td>
</tr>
<tr>
<td>Marci</td>
<td>-4</td>
<td>Mary Ann +3</td>
<td>Lora -1</td>
</tr>
<tr>
<td>Wendy</td>
<td>-2</td>
<td>Missy -7</td>
<td>Lisa +1</td>
</tr>
<tr>
<td>Jimmy</td>
<td>+9</td>
<td>Kenneth 0</td>
<td>Lisa +2</td>
</tr>
<tr>
<td>Jon Paul</td>
<td>-6</td>
<td>Garrett 0</td>
<td>Scott +5</td>
</tr>
<tr>
<td>K. R.</td>
<td>+8</td>
<td>Gar -1</td>
<td>Kevin -5</td>
</tr>
<tr>
<td>Jonathon</td>
<td>+1</td>
<td>Eric +3</td>
<td>Steven +4</td>
</tr>
<tr>
<td>Blake</td>
<td>+1</td>
<td>Roger +2</td>
<td>Rulon +4</td>
</tr>
<tr>
<td>Subgroup AII Control</td>
<td>Subgroup BII Pos Reinforcement/Pos Attitude</td>
<td>Subgroup CII Neg Reinforcement/Pos Attitude</td>
<td>Subgroup DII Neg Reinforcement/Neg Attitude</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------</td>
<td>------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Christine</td>
<td>-1</td>
<td>Lisa</td>
<td>Annette</td>
</tr>
<tr>
<td>Wendy</td>
<td>+3</td>
<td>Heidi</td>
<td>Stella</td>
</tr>
<tr>
<td>Laura</td>
<td>+1</td>
<td>Loree</td>
<td>Stephanie</td>
</tr>
<tr>
<td>Myrlene</td>
<td>-2</td>
<td>Michelle</td>
<td>La Rayne</td>
</tr>
<tr>
<td>Tonia</td>
<td>+3</td>
<td>Carolyn</td>
<td>Kristine</td>
</tr>
<tr>
<td>Gray</td>
<td>+12</td>
<td>Michelle</td>
<td>Michael</td>
</tr>
<tr>
<td>Shon</td>
<td>+1</td>
<td>Rex</td>
<td>Joseph</td>
</tr>
<tr>
<td>Shawn</td>
<td>+5</td>
<td>Monte</td>
<td>Stephen</td>
</tr>
<tr>
<td>Brian</td>
<td>+2</td>
<td>Duane</td>
<td>Mathew</td>
</tr>
<tr>
<td>Dale</td>
<td>+2</td>
<td>Daniel</td>
<td>Billy</td>
</tr>
</tbody>
</table>

Table 2. Score changes for children in the Head Start classrooms (Sample II) as a function of reinforcement conditions.
Similarly, Table 2 contains score changes for all Head Start children (Sample II) according to reinforcement conditions. In the control condition (subgroup A\textsubscript{II}), eight children increased their performance and two children decreased. Under conditions of positive verbal reinforcement/positive attitude (subgroup B\textsubscript{II}), eight children increased and two children decreased. There were also eight children who increased their performance and two children who decreased under conditions of negative verbal reinforcement/positive attitude of the researcher (subgroup C\textsubscript{II}). However, when both verbal reinforcement and attitude were negative (subgroup D\textsubscript{II}), six children increased and four decreased.

A multiple analysis of variance was performed on the score changes to determine if significant differences existed in relation to the positive and negative conditions of verbal reinforcement and researcher attitude, and further, if these differences varied according to socioeconomic level of the child. Results of the analysis are shown in Table 3.

Table 3. Results of a two-way analysis of variance

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Degrees of freedom</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between columns (Condition)</td>
<td>3</td>
<td>105.74</td>
<td>35.25</td>
<td>2.225</td>
</tr>
<tr>
<td>Between rows (Socioeconomic level)</td>
<td>1</td>
<td>94.62</td>
<td>94.62</td>
<td>5.97*</td>
</tr>
<tr>
<td>Interaction</td>
<td>3</td>
<td>6.93</td>
<td>2.31</td>
<td>.146</td>
</tr>
</tbody>
</table>

* Significant for $\alpha=.05$
The data in Table 3 indicate that the f score value is not significant for the difference between columns (reinforcement conditions A, B, C, and D). Therefore, the differential effect of the verbal and attitudinal reinforcers is not statistically significant. However, the f score value for the difference between rows (Child Development Laboratory children versus Head Start children) is significant at the .05 level. There is a statistically significant difference with respect to socio-economic level in the relative effectiveness of the combined reinforcement conditions. The analysis revealed no significant difference in interaction of reinforcement conditions and samples. This indicates that the joint effect of the interaction of the two variables over and above the sum of their separate effects is not significant.

**Hypotheses**

The first hypothesis stated that there is no difference with respect to motivating effect of positive and negative verbal reinforcers on the performance of young children. No significant difference was found between the control subgroup A, subgroup B (positive reinforcement), and subgroup C (negative reinforcement); therefore, the first hypothesis could not be rejected.

The second hypothesis stated that there is no difference with respect to motivating effect of positive and negative attitude of the researcher on the performance level of young children. No significant difference was found between the control subgroup A, subgroup C (positive attitude), and subgroup D (negative attitude); therefore, the second hypothesis could not be rejected.

The third hypothesis stated that there is no difference with respect to socioeconomic level in the relative effectiveness of positive and
negative verbal or attitudinal reinforcement on performance. A significant difference was found between the response of Child Development Laboratory children and Head Start children to the combined reinforcement conditions; therefore, the third hypothesis was rejected.

Examination of the findings

No significant difference was found to exist between reinforcement conditions in terms of their influence on performance level. This finding is inconsistent with previously cited literature which reported that positive and negative verbal reinforcement generally differ in their effectiveness as motivators. Attitude of the researcher as a variable in motivation studies has not been sufficiently investigated, and literature provides little indication of whether the present findings are a true index of the strength of this variable. It is conceivable that the small size of N did not lend itself favorably to a statistical test of significance; thus, findings on both types of reinforcers may have been distorted.

However, even though the difference between positive and negative conditions did not approach significance, the researcher noted trends in the data that warrant consideration. A survey of the score changes in Tables 1 and 2 points out certain directional and quantitative trends apparent in both samples. If absolute values are assigned to score change totals for the subgroups of the Child Development Laboratory children and the Head Start children, they can be summarized as in Table 4.

The data in Table 4 indicate the direction and quantity of performance changes for all reinforcement conditions. In the Child Development Laboratory (Sample I), the overall score changes are +11 in the control condition, 0 in the positive verbal reinforcement/positive attitude condition, +22 in the negative reinforcement/positive attitude condition, and
Table 4. Absolute values of score change totals for subgroups in the Child Development Laboratory and Head Start samples

<table>
<thead>
<tr>
<th>Sample</th>
<th>Subgroup A</th>
<th>Subgroup B</th>
<th>Subgroup C</th>
<th>Subgroup D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Pos Reinforcement/ Pos Attitude</td>
<td>Neg Reinforcement/ Pos Attitude</td>
<td>Neg Reinforcement/ Neg Attitude</td>
</tr>
<tr>
<td>Child Development Laboratory</td>
<td>+11</td>
<td>0</td>
<td>+22</td>
<td>-16</td>
</tr>
<tr>
<td>Head Start</td>
<td>+26</td>
<td>+26</td>
<td>+39</td>
<td>+13</td>
</tr>
</tbody>
</table>
-16 in the negative reinforcement/negative attitude condition. Score changes for the Head Start sample (Sample II) are +26 in the control condition, +26 in the positive reinforcement/positive attitude condition, +39 in the negative reinforcement/positive attitude condition, and +13 in the negative reinforcement/negative attitude condition.

In examining the subgroups separately, the researcher noted several trends in responses of laboratory children to different reinforcement conditions. They showed no overall increase in performance as a result of positive verbal reinforcement administered with positive attitude (subgroup B₁). The subgroup actually responded less favorably to the positive condition than did children in the control condition who received no verbal reinforcement (subgroup A₁). Possibly, middle class children are satiated with verbal approval both in the home and in the classroom, thereby deriving little motivation from approval in relation to that derived from reproof or criticism.

On the other hand, laboratory children who received negative verbal reinforcement administered with positive attitude (subgroup C₁) showed the highest increase in performance. It appears that middle class children are challenged by criticism of their efforts when it is given in a positive way. However, the overall decrease in performance resulting in the negative reinforcement/negative attitude condition (subgroup D₁) seems to indicate that such children are unaccustomed to negative evaluation of their performance when it includes a negative attitude toward themselves as well.

Data for the children in Head Start classrooms differ from those of laboratory children. Absolute values of score changes for the control condition (subgroup A₁₁) and that of positive reinforcement/positive attitude (subgroup B₁₁) were equal. Children under both conditions showed a considerable increase in performance. However, Head Start children
receiving negative reinforcement with positive attitude (subgroup C_{II}) showed a greater increase. In view of literature on the disadvantaged child, this finding seems consistent. Children from disoriented lower class homes and those with low self-esteem tend to respond more to criticism than to praise.

Findings related to Head Start children under conditions of negative reinforcement/negative attitude (subgroup D_{II}) seem inconsistent. Overall, these children responded with an increase in performance, but the increase was not as large as that under other conditions. A possible explanation is that lower class children suffer from "affect hunger." Any opportunity to be closely attended by an adult is so rare as to be motivating in itself. Whereas middle class children frequently receive warmth, verbal praise, and positive experiences with adults, the lower class child may be so deprived of such encounters that the initial positive test administration was highly motivating—so motivating, in fact, that the children in subgroup D_{II} responded to the second negative testing experience in terms of striving to reproduce the warm, rewarding aspects of the first. This would account for the fact that twice as many Head Start children as laboratory children in the totally negative condition increased the level of their performance.

In addition to trends for individual subgroups, certain consistencies between samples can be noted from Table 4. Absolute values for score change totals are highest in the subgroups receiving negative reinforcement with positive attitude, and they are lowest in the subgroups receiving negative reinforcement with negative attitude. The researcher interprets this as an indication that the reinforcement condition of negative reinforcement/positive attitude is highly motivating for children from both socioeconomic levels. In addition, the researcher considers the data on
subgroups that received the totally negative condition as evidence that negative attitude on the part of the experimenter or teacher toward lower and middle class children has a debilitating effect on their motivation and performance. Further study is necessary in order to define more precisely the role of the negative incentive and attitude in motivation of young children.

The only statistically significant finding of the present study deals with the differential responses of middle and lower class children to the combined reinforcement conditions. Since there is no difference with respect to the various conditions, the difference seems to lie in the magnitude of response. Also, the absolute values of total score changes reveal a trend. All four subgroups containing Head Start children (Sample II) have higher absolute total scores than their corresponding subgroups containing Child Development laboratory children (Sample I). It appears that children from the lower socioeconomic class respond more to any type of verbal reinforcement or attitude condition than do children from the middle socioeconomic class. In terms of "affect hunger," lower class children may strive to perform at a higher level in an effort to maintain interaction with adults.
Problems encountered during the study

"The study of motivation has to do with analysis of the various factors which incite and direct an individual's actions" (Atkinson, 1964, p. 1). Research into the problem of motivating young children has failed to isolate those factors which directly influence motivation. Studies previously cited indicate that many personal and physical aspects of the child, the researcher, the setting, and the task involved affect motivation.

Due to the great number and variety of possible influential variables, the researcher would have preferred a more controlled physical setting in which to conduct testing for the present study. Task involvement required of the children was sufficient to prevent loss of interest from occurring, and no child in either sample interrupted the task to ask questions concerning his surroundings or to express interest in any aspect of the testing room. However, there is no way of knowing if unexpressed curiosity was present in some children and if this affected their performance. Neither is it possible to assess the effect of such abstract variables as past experience with strange places, individual preferences for colors and space, physical comfort, and distraction from outside noises on the motivational level of children. In order to adequately explore these aspects, all testing should be done in a soundproof, comfortable, well-lighted, and distraction-free room.

The researcher noted another drawback with respect to physical facilities for research. Because motivation of young children remains
undefined after countless attempts to analyze it, a precise and systematic record of each child's responses to the entire test procedure would have been beneficial. The researcher observed that children of preschool age, candid and uninhibited, responded openly to various aspects of the research situation in such a way as to provide more insight into their motivational set than did their recorded responses. In the pilot study, one child looked up at the researcher whenever she placed a peg in the pegboard and continued to work only after receiving a reassuring smile. The child's need for constant reinforcement and the motivation she derived from the researcher's smile might have gone unrecorded in the actual study since the researcher was unable to make notes while the child was in the room. Comments made by the children could not be written down until after the testing was completed, as such recording would have communicated a feeling of disinterest and professional distance. Many verbal reactions were lost as a result. Such expressions of motivation and enthusiasm as "I can get two whole rows filled up this time" and "I hope I get more today" are an integral part of research into incentive value and a child's need to achieve. In order for them to be included in the results of a study, along with physical and facial expressions, video taping is recommended. Later, results can be observed and examined more closely.

The instrument used in the present study was another source of variance. As explained in the chapter on Methods and Procedure, the pegboard was selected because of its size and maneuverability of its pegs. However, the two colors of the pegs available to the children, and the dots, one on an end of each peg, resulted in unanticipated manipulation of pegs by the children during the study. It is impossible to assess to what degree the manipulations affected performance. Not all children were concerned
with either colors or dots; some merely put pegs in the pegboard indiscriminately. But one child in the Child Development Laboratory sample and four children in the Head Start sample purposely put all blue pegs in the board, and three laboratory children and one Head Start child put all green pegs in. One child in each sample alternated blue and green vertical rows, one Head Start child alternated blue and green horizontal rows, and two Head Start children alternated blue and green pegs. Similarly, several children arranged their pegs with dots either up or down. Five children in the laboratory sample and nine children in the Head Start sample placed all their pegs with dots up. These children often would remove an incorrectly placed peg from the board, reverse it, and replace it before going on to the next peg. The various patterns of colors and dots, and combinations of both, are reported in Appendix A.

Another patterning aspect emerged during the study, unrelated to either colors of pegs or position of dots. The placement of pegs in the pegboard varied considerably. The majority of children placed pegs in vertical rows, working from bottom to top in each row because the bottom of the board was nearest them. Two children in the laboratory sample and five children in the Head Start sample placed pegs across the board in horizontal rows. One laboratory child and six Head Start children placed pegs all over the board without forming rows. Finally, one child in the Head Start sample made a symmetrical, diagonal-cross pattern with the pegs. The researcher noted that no child seemed more concerned with the pattern of his pegs than with completing the experimental task itself. However, there is no indication of the extent to which a child's concern with his peg pattern affected his rate of performance.

An additional variable which could not be controlled and which may have influenced performance on the experimental task was verbalization by
the child during the timed test period. The children generally became quiet once instructions were given, but there were several exceptions. One child declared quite determinedly, "I am going to build a fence so my dog won't run away," and he proceeded to place his pegs in a rectangular pattern. Another, having almost completed one row around all four sides of the unfilled portion of the board, exclaimed, "I made a window!" Only two children, one from each sample, were cited by the researcher as being very talkative on the first test administration. Both received negative verbal reinforcement on the second administration and became considerably less talkative, thereby increasing their performance. One laboratory child stopped working to ask the researcher how much time remained before she would have to stop.

Fine muscle coordination seemed to contribute to the differences among children in their handling of the pegs. Many children were able to reach repeatedly into the tray, withdraw the first peg their fingers touched, and place the peg in the pegboard with ease. Others would reach for a particular peg and, unable to grasp it in their excitement, alternately push and follow it about on the tray before finally retrieving it.

**Differential responses of Child Development Laboratory children and Head Start children to the study**

The present study dealt specifically with the effectiveness of various reinforcement conditions relative to socioeconomic level. Significant differences between the samples are discussed in the chapter on Analysis and Findings. The researcher noted other differences which may be of interest to the reader.

As indicated in the previous section, children from the Head Start sample more often selected a particular color or pattern of pegs than did children in the laboratory sample. Twenty-one Head Start children placed
their pegs in the board in a specific way, as compared with ten laboratory children who did so. Furthermore, the most intricate pattern of pegs, that of a symmetrical, diagonal cross, was formed by a child from the Head Start sample. The researcher wondered if this was an indication of less competitive spirit among the Head Start children; they seemed to be more intrigued by the colors and design possibilities of the pegs and pegboard than with speed of performance.

In contrast to this, however, several Head Start children (but not one laboratory child) grasped handfuls of pegs at a time from the tray and placed them in the board. This would seem to indicate a high level of motivation to achieve on the part of Head Start children.

The researcher noted further differences between children from the two socioeconomic levels. Children in the Head Start sample did not look up at the researcher during the timed test period as often as did laboratory children. They seemed to have less need for an expression of approval, and, in fact, many worked until "stop" was called without ever looking up from the pegboard. It is conceivable that the disadvantaged child, accustomed to receiving little verbal approval or affective expression in the home, did not expect to receive such approval from the researcher and did not seek it.

In addition to needing less approval, the Head Start children seemed to be less affected by the negative reinforcement/negative attitude condition than the laboratory children. Five children from the laboratory sample reacted with noticeable fright as a result of the researcher's negative attitude; one child stopped working after completing one row and continued only upon the suggestion of the researcher. Children from the Head Start sample seemed undaunted by the totally negative condition. Their performance increased less under the condition than under any other,
but their facial expressions did not communicate fear. The researcher proposed that the Head Start children were more familiar with expressions of negative attitude and criticism; therefore, they did not respond to these with fear or astonishment.

The researcher sensed that, in general, children from the Head Start sample were more excited and enthusiastic about participating in the study than those from the Child Development Laboratory. Even though they were enrolled in a Head Start program of preschool enrichment and were receiving some teacher attention and support each day, it was apparent that they had been deprived of necessary interaction with warm, caring adults. More Head Start children than laboratory children asked for their turn to go with the researcher. In addition, no child in either Head Start classroom had to be replaced in the study because of his refusal to cooperate. Two laboratory children were replaced for uncooperativeness.

Further interpretations of the findings

In Chapter IV, the researcher presented findings in terms of statistical analysis and absolute values of subgroup score totals. However, it seems appropriate in a study of attitude and its influence on young children to discuss the findings in terms of the children themselves. The present study does not deal strictly with a measurable response of subjects but with the unmeasurable entity of motivation. Psychologists have been unable to fully define motivation of children, but if we consider it merely as an antecedent to a child's behavior, we must analyze his entire motivational set in order to understand that behavior.

No particular type of response characterized the Child Development Laboratory children in the control condition or the positive reinforcement/
positive attitude condition. They appeared rather complacent, and none expressed a desire to improve performance. Their scores were inconsistent: five control children increased, four decreased, and one made no change, while in the positive reinforcement/positive attitude condition, four increased, three decreased, and three made no change.

Under conditions of negative reinforcement/positive attitude, however a noticeable change occurred among the children. They became highly agitated and seemed intent on increasing their rate of performance. One child picked up a handful of pegs at once; another worked so fast that she dropped several pegs and did not significantly raise her score. Only two laboratory children in the negative reinforcement/positive attitude condition decreased their level of performance during the second test. One of these was so anxious that she stopped working to ask about the amount of time remaining, and, as a result, decreased her score.

In the negative reinforcement/negative attitude condition, considerable fear was evident in many of the laboratory children. One child stopped working after completing a row; another hesitated often, looking up at the researcher for a reinforcing smile; and several others placed their pegs in the board slowly and without interest. Only three children increased their performance rates, and of those, two seemed only slightly affected by the negative condition. They looked at the researcher as if not believing she could possibly be serious, and then they began working in a manner similar to that of their first test administration. One child who showed an increase in performance did so because he was extremely talkative during the first test, pausing several times to smile and look at the researcher. In the post-test, he responded with fear to the instructions and worked slowly but steadily at the task without saying a word, thus increasing his score.
The researcher interpreted the responses of laboratory children to the various reinforcers as indicative of very real differences in relative effectiveness of reinforcement conditions. It was apparent that the children from a middle socioeconomic class environment were quite familiar with praise and positive attitude from warm, responsive adults and that they derived little motivation from such reinforcers. Negative reinforcement, on the other hand, seemed to challenge the laboratory children, perhaps because they seldom received criticism from their parents or teachers. They tended to respond vigorously when the researcher expressed a positive attitude toward them while evaluating their performance negatively. Allen (1966) suggested that motivation is derived from the discrepancy between a child's perception of his performance and the experimenter's evaluation of the child's performance. If a child feels he is doing well but is evaluated negatively by the experimenter, he may work harder at the task.

In contrast to the motivating challenge of negative reinforcement administered with positive attitude, negative reinforcement/negative attitude seemed to frighten and discourage the laboratory children. The overall decrease in their performance under this condition was consistent with the findings of several studies (Reece and Whitman, 1961; McCoy and Zigler, 1965; Rosenthal, 1966; Allen, Spear, and Johnson, 1969) that reported positive attitude of the experimenter to be more facilitating than negative attitude.
SUMMARY AND CONCLUSIONS

The problem of motivation is vast, and despite numerous research attempts, questions concerning it have not been answered. Literature dealing with motivation of the young child has been discrepant. No definitive assessment has been made with respect to the relative effectiveness of intrinsic and extrinsic motivation. Further, no conclusion has been reached as to the most influential type of extrinsic motivation.

Several authors have indicated that if educators are to find a solution for the crippling deprivation of our disadvantaged children, motivation must be a key consideration. Research has shown that motivation of an intrinsic nature, such as need for achievement or learning acquisition, may not be sufficient to motivate disadvantaged children.

The present study has attempted to explore the motivational potential inherent in the extrinsic motivators of verbal reinforcement and researcher attitude. In addition, the study has investigated the differential effectiveness of these motivators in terms of children from the lower and middle socioeconomic classes. Forty children from the Utah State University Child Development Laboratory and forty from Head Start classrooms in northern Utah comprised the sample. These eighty children were randomly exposed to one of four reinforcement conditions: a control condition (no verbal reinforcement and neutral attitude of the researcher); positive reinforcement with positive attitude of the researcher; negative reinforcement with positive attitude of the researcher; or negative reinforcement with negative attitude of the researcher. The method used to
measure the children's responses to the reinforcing conditions was the
task of placing pegs in a pegboard during a 60-second time interval.
Each child performed the task twice, under conditions of positive rein­
forcement during the first administration and under one of the experi­
mental conditions during the second administration. An analysis of
variance test was performed on the score changes of the children to
determine if differences were significant.

Conclusion

From the results of the present study, the following conclusion
can be drawn: The motivating effects of verbal reinforcement and
researcher attitude on preschool children seem to vary according to
socioeconomic level.

The extent of the variance cannot be fully defined, but there is
a directional trend evident from the data in Table 4. Children from the
lower socioeconomic class seem to respond more to either of the experi­
mental conditions than do children from the middle class.

Recommendations for further study

The present investigation into the relative values of positive and
negative verbal incentives and researcher attitude in the motivation of
young children clearly indicates a need for further study in these areas.
Based on the results of the present study, the following questions are
recommended for future exploration.

1. Is there a relationship between the pattern of a child's pegs
and his performance on the experimental task? If so, how does a child's
choice of pattern relate to his socioeconomic level? Does an inverse
relationship exist between creativity, as expressed by patterning, and
performance on the task? What are the implications for working with
disadvantaged children if this is the case?

2. Does an initial positive experience with the researcher distort the influence of researcher attitude on a child? How would the results of the present study be altered by the administration of the first testing experience with a neutral attitude and no reinforcement? What are the implications for a teacher whose first encounter with a child is one of indifference?

3. Are children motivated by indifference on the part of a researcher or a teacher? What results would be obtained in a repetition of the present study if the researcher read a book or magazine during the timed test interval?

4. What differences would occur if the researcher was male? If a same-sex researcher was used for each child? Does this vary according to socioeconomic level?

5. Are preschool children aware of a researcher's attitude enough to be affected by mere expressive movements without the use of verbal attitudinal expressions?

6. How is the attitude of the researcher and its effect on young children related to a child's self-concept? Does a correlation exist between scores on a measure of self-concept and response to positive or negative attitude? Positive or negative reinforcement?

7. Does unfamiliarity of the researcher significantly influence results in an investigation of this type? Would similar results be obtained if the study were repeated by teachers of the children involved?

8. Would significantly different results be obtained if the instrument was uncolored?
LITERATURE CITED


Fowler, Beverly Davis. 1962. Relation of teacher personality characteristics and attitudes to teacher-pupil rapport and emotional climate in the elementary classroom. PhD dissertation, University of South Carolina, Columbia, South Carolina. 191 p. (Original not seen; abstracted in Dissertation Abstracts 23:1614.)


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Vega, Manuel. 1964. The performance of Negro children on an oddity discrimination task as a function of the race of the experimenter and the type of verbal incentive used by the experimenter. PhD dissertation, Florida State University, Tallahassee, Florida. 102 p. (Original not seen; abstracted in Dissertation Abstracts 26:1176.)


Table 5. Record of results for Child Development Laboratory children

<table>
<thead>
<tr>
<th>Child's name</th>
<th>Condition</th>
<th>Test scores #1</th>
<th>Test scores #2</th>
<th>Pattern</th>
<th>Change in scores</th>
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</thead>
<tbody>
<tr>
<td>Charlotte</td>
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<td>23</td>
<td>23</td>
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<td>27</td>
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<td>Control</td>
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<td>12</td>
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<td>-2</td>
</tr>
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<td>28</td>
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<td>12</td>
<td>13</td>
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* Positive reinforcement/positive attitude
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<th>Child's name</th>
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<th>Pattern</th>
<th>Change in scores</th>
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<td>+3</td>
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<td>Jolene</td>
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<td>16 19</td>
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<td>Lora</td>
<td>Pos/Neg</td>
<td>20 19</td>
<td>none</td>
<td>-1</td>
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<td>Lisa</td>
<td>Pos/Neg</td>
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<td>none</td>
<td>+1</td>
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<td>Lisa</td>
<td>Pos/Neg</td>
<td>19 21</td>
<td>none</td>
<td>+2</td>
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<td>Pos/Neg</td>
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<td>-5</td>
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<td>none</td>
<td>+4</td>
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<td>Neg/Neg**</td>
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<tr>
<td>Lisa</td>
<td>Neg/Neg</td>
<td>20 22</td>
<td>all green; dots up</td>
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* Positive reinforcement/negative attitude  
**Negative reinforcement/negative attitude
Table 6. Record of results for Head Start children

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<th>Child's name</th>
<th>Condition</th>
<th>Test scores</th>
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<td>18</td>
<td>all blue; dots up</td>
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<td>Gray</td>
<td>Control</td>
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<td>none</td>
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<td>Shon</td>
<td>Control</td>
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<td>around board</td>
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<td>19</td>
<td>all blue; dots up</td>
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<td>Condition</td>
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</tr>
</tbody>
</table>
VITA

Carol Hunter Byrnes
Candidate for the Degree of
Master of Science

Thesis: The Role of Verbal Incentives and Researcher Attitude in the Motivation of Preschool Children from Different Socioeconomic Levels

Major Field: Child Development

Biographical Information:


Education: Graduated from Surrattsville Senior High School, Clinton, Maryland, in 1964; received the Bachelor of Science degree from Florida State University in 1968, with a major in Housing and Interior Design; completed requirements for the Master of Science degree in Family and Child Development at Utah State University in August, 1972.