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AFFECT, ALTRUISM, AND SOCIAL INFERENCE IN MENTALLY RETARDED PERSONS

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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***********

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1975

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CHAPTER I

REVIEW OF THE LITERATURE

It is the purpose of this research to investigate the effects of positive and negative affect on altruism and social inference, and to investigate the relationship between altruism and social inference.

Altruism: Theory

The study of altruism has been approached from four different theoretical perspectives. The social group approach (Hogan, 1969; 1970; 1973; Hogan & Dickstein, 1972) considers man as a rule-formulating and rule-following animal. According to Hogan (1973) this approach assumes that all purposive human behavior occurs in the context of complex overlapping rule systems. Furthermore, every human rule system is an ethic, such as justice or fairness. Lastly, the outlines and patterns of social behavior can be explained in terms of systematic properties of diverse applicable rule systems. Moral conduct and character can thus be described in terms of five dimensions: moral knowledge, socialization, empathy, autonomy, and moral judgment. Altruism would be viewed in this theory as a particular cluster of the five concepts.

The psychoanalytic approach (Flugel, 1970) would view
altruism as behavior governed by the two aspects of the superego: the conscience and the ego-ideal. The conscience represses the forces of the id which would be detrimental to civilization (Freud, 1961) and the ego-ideal channels behavior into prosocial forms.

The learning theory approach to altruism (Aronfreed, 1968; 1969; Eysenck, 1964) views this particular behavior is shaped by punishment, reward, and modeling. In brief, an individual learns to behave altruistically by the same laws of learning in which other behavior has been acquired.

The fourth approach is the cognitive-developmental. Based on a Piagetian framework (Flavell, 1963) this theory has become fashionable in developmental psychology in the hands of Kohlberg (1958; 1964; 1969; 1973). Altruism would be viewed as the behavioral product of the highest modes of cognitive operations, viz., postconventional thinking. Research in the field of mental retardation concerning morality has mainly operated within this perspective. It is still a moot point, however, whether this is the most heuristic approach. The cognitive-developmentalist is more apt to examine moral reasoning and moral judgment than moral conduct and behavior. Although one might argue that moral cognitions are a form of moral behavior this has not been empirically established. The definition of a mentally retarded individual is a person that shows both cognitive and behavioral deficits (Grossman, 1973). To concern oneself with only the moral reasoning of retardates and not their observable moral conduct is to ignore the advances in contemporary thinking about mental retardation.
Moral Development in the Mentally Retarded

Moral development research with retarded persons has been concerned with three salient constructs: moral reasoning, moral judgment, and moral conduct. Only moral conduct is directly relevant to a study in altruism. This is for two reasons. First, altruism, ipso facto, is a behavioral measure, not a cognitive one. The second reason directly follows, viz., research has not demonstrated the precise relationship between thought and action (Aronfreed, 1974). Therefore, it is difficult to know how to interpret findings on moral judgment and reasoning behaviorally, particularly on a behavioral measure such as altruism. Stephens, McLaughlin, Mahoney, and Moore (1974) have made the most ambitious and impressive attempt to date and it is their work which will be reviewed first.

Stephens and her colleagues at Temple University were interested in four questions: 1) In what way are the thought processes of retarded persons different from those of nonretarded persons? 2) Does the reasoning ability of retarded individuals continue to develop beyond adolescence? 3) Is reasoning in logical situations related to reasoning in moral situations? And 4) Is the moral development of retarded persons comparable to that of nonretarded persons? The sample was composed of 75 retarded (IQ=50-75) subjects and 75 nonretarded (IQ=90-110) subjects of three age levels (6 to 10, 10 to 14, and 14-18). Subjects were reassessed
after two years and the study is still in progress.

To assess moral reasoning Stephens and her colleagues used four Piagetian concepts of conservation, logical classification, operativity and symbolic imagery, and formal operations. A summary of their findings for the construct of moral reasoning indicated developmental trends across age groups in the reasoning of nonretarded persons, developmental trends in retarded persons only between the first two age groups, and significant differences between the performance of nonretarded and retarded subjects on 20 of 29 reasoning tasks when mental age and chronological age were held constant (Stephens & McLaughlin, 1974). The authors concluded that their longitudinal results after two years indicated that acquisition of formal thought processes continue beyond the eighteenth year in persons of average intelligence, but in retarded persons the lack of differences between the middle and older groups suggest possible arrest of cognitive development in the older group.

To assess moral judgment the Temple University group (Mahoney & Stephens, 1974) used a scoring system devised by Kohlberg for three measures of moral judgment: lying, justice, and clumsiness and stealing. Scores for the three age groups of retarded subjects demonstrated improved performance over time on the three decision-making tasks concerning accountability of an entire group for the misdeeds
of one of its members. However, either continuing immaturity or regression was displayed in retarded subjects' judgment of intent vs. consequences in the three clumsiness and stealing measures.

To assess moral conduct the Temple group (Moore & Stephens, 1974) used some of Hartshorne and May's (1928-1930) categories, including self-control, honesty, cheating, and persistence. The authors concluded that their findings destroy the myth that retarded persons are more prone to engage in misconduct than nonretarded persons. "There is equivalence in the conduct of nonretarded and retarded subjects of comparable MA" (p. 152). The Temple group also reported that moral conduct is developmental, viz., conduct improves with increased MA and CA. An oscillation in moral conduct development was found in middle adolescence and this period was referred to by the investigators as a "critical period" for training moral conduct. Altruism was not a variable in this moral conduct study, but it surely deserves to be subsumed under this heading.

To assess the relationships between reasoning, moral judgment, and moral conduct Stephens and her colleagues (Stephens & McLaughlin, 1974) examined factor loadings of all three measures. Results of factor analyses suggested a low or moderate relationship among them. Given two additional years of growth, the findings of the Temple study indicated that reasoning measures tend to combine with
measures of moral judgment and moral conduct in both retarded and nonretarded subjects. This is perhaps one of the most important results of the Temple group's ambitious enterprise. Ten factors in the retarded subjects and six factors in the nonretarded subjects were defined by combination of reasoning and moral judgment, and by combinations of reasoning, moral judgment, and moral conduct. It would have been interesting to see if altruism might have emerged as a separate factor.

Less monumental but still of importance were studies conducted by Boehm (1962; 1967; & Nass, 1962) at Brooklyn College. She was interested in conscience development of retarded and nonretarded persons. When investigating social class differences in conscience development (Boehm & Nass, 1962) Boehm interviewed working class and upper middle class children using Piaget's clinical method. Responses were recorded from four stories designed to measure attitudes toward physical aggression, material values, lying, and ingratiation of authority and authority dependence. It was found that none of the stories differentiated social class at a statistically significant level, sex effects were not present, age effects were only present when groups were divided into "below nine-year-old" and "above nine-year-old," and there were no significant interactions. A corresponding study (Boehm, 1962) examined intelligence levels in conscience development and found: 1) Academically
gifted children mature earlier in their moral judgments concerning distinctions between intention and outcome of an action than children of average intelligence, and 2) There is a greater difference between responses of academically gifted children of average intelligence of the upper middle class than between gifted children and those of average intelligence in the working class. Lastly, in her study using only mentally retarded subjects, Boehm (1967) once again used Piagetian stories and discovered a lack of significant differences between 16- and 17-year-old adolescents with IQs of either 50-59 or 60-69. She pointed out that previous studies had shown not only that chronological age was a factor in the moral judgment of younger children but also that the level of intelligence was a variable. She concluded:

It could be that because these are not normal subjects, there is no reason to expect results comparable to normal subjects and to conjecture that the mentally retarded may form a special class with their own unique characteristics in this, as we know they do in some other respects. (p. 100)

Boehm also suggests that after a certain point of development social and emotional maturity are no longer tightly related to chronological or mental age but may still play a role in determining awareness of right and wrong. This last point will lead into a discussion of social inference and its role in altruism.

Before entering the topic of altruism directly there
are four further studies which complete the present re-
view. Ozbek and Forehand (1973) examined the relationship
between moral judgment and a number of demographic and
behavioral variables. In contradistinction to Boehm's
(1967) results, chronological age was the best predictor
of a subject's level of moral judgment. Ozbek and Forehand
only provide the reader with a mean and range of CA's so
their conclusion is still moot. They also found mental age,
father's education, and father's occupation correlated sig-
nificantly with moral judgment. Once again subjects were
not properly assigned to groups so any conclusions are
nebulous.

The last three studies in this area were all doctoral
dissertations. DiNola (1972) found moral judgment to be
positively related to mental age in the two moral judgment
dimensions of moral realism and justice among retarded
subjects. His data did not support the hypotheses that
mentally retarded who had a greater number of opportunities
to interact socially with peers or who had received high
social behavior ratings would attain more mature social
judgments. Children with higher role-taking abilities
did attain more mature moral judgment responses however.
Borgman (1972) discovered a direct relationship between
maturity of moral reasoning in retarded children and the
maturity of his mother's child rearing concepts when the sub-
jects had a mental age above six. Lastly, Strong (1968) in-
vestigated retarded persons in institutionalized and community settings. His hypothesis that length of institutionalization makes no difference in the number of judgments made in terms of moral realism was borne out.

In sum, the reader may conclude that the moral conduct of retarded persons is an area showing a dearth of research. Altruism in particular is not represented. Moral judgment, however, has been investigated from a number of perspectives, sometimes with contradictory findings. Age, both chronological and mental, social class, sex, and length of institutionalization have been relevant variables included. The longitudinal research at Temple University by Stephens and her colleagues (1974) is the most comprehensive to date.

Altruism and Affect

In addition to describing altruism under the four theories posited earlier, one may view it along two other dimensions (Krebs, 1970). Altruism may be examined as a core attribute of the benefactor's personality, or as a function of a temporary state of the benefactor. Research relevant to it as a personality trait has been criticized (Krebs, 1970). Research into the situational determinants of altruism among the nonretarded have increasingly made use of affect as a setting condition (Bryan & London, 1970; Moore, Underwood, & Rosenhan, 1973; Harris & Siebel,
Note 1). Previous authors had investigated the effect of success and failure on altruistic behavior (Isen, Horn, & Rosenhan, 1973; Harris & Huang, 1973; Staub, Note 3; Staub, Note 4). These investigators interpreted their findings in light of what affective experiences accrued from success experiences or failure experiences. Most adult subjects who experienced success were more willing to help a beneficiary than did control subjects. Isen (1970) suggested that "the warm glow of success" increases one's tendency to help others. Nevertheless, the interpretations are suspect. As Moore, et al. (1973) point out, the altruism may not have been promoted by the affect as by a sense of competence born of the success, or perhaps the expectancy of further success. Consequently, researchers have been inducing affect directly to determine its effects on altruism (Isen & Levin, 1972; Fry, 1975).

These studies of success and failure experiences have particular importance in the field of mental retardation in general and altruistic behavior of the retarded in particular. The effects of success and failure on the retarded has been viewed in research from two perspectives. First is the theoretical orientation of Zigler (1966; & Harter, 1969). And second is the personality research on the retarded stemming from Rotter's (1954; 1975) concept of locus of control.

Zigler and Harter (1969) maintain that all theories
of mental retardation can be divided into two camps: those that look at the behavioral anomaly of retarded persons and claim it to be due to a defect (generally physical or anatomical), making the retarded person qualitatively different than a nonretarded person; and those giving credence to a similarity viewpoint, saying that the retarded are not immutably different than the nonretarded but are a natural expression of the normal distribution of the gene pool for intelligence. In the similarity point of view (which Zigler favors) many of the behavioral differences between the retarded and the nonretarded are seen as products of motivational and experiential differences between the two groups. The most salient experiential difference in the mentally retarded is their higher negative interactions with the environment and the consequent higher expectancy of and actual failure. Many studies have borne this out. Macmillan and Keogh (1971), for example, administered a series of block designs to 60 normals and 60 retarded persons and interrupted half of each group prior to completion. The interruption was perceived differently by the two groups. The retarded tended to perceive interruption as a personal failure while the normals did not.

The other perspective is exemplified by Cromwell (1963) and other social learning theorists. Essentially these theoreticians believe that the child's previous history of reinforcement is one of the chief determinants of how he
will react to failure or success. Due to different en-
counters with success and failure as reward and punishment,
success with a retarded person should have a more distinc-
tive and enhancing effect than with a nonretarded person
because success is more unusual with a retarded child (cf.
Robinson & Robinson, 1970). Research with performance as
a criterion appears to have confirmed these hypotheses
(e.g., Rosenbaum & Hill, 1969; Schuster & Gruen, 1971).
Along the same lines, some investigators have shown that
the retarded have more of an external locus of control and
present a picture of helplessness when left in the commun-
ity on their own (Floor & Rosen, 1975).

From an emotional standpoint, one might reason that
success produces greater feelings of competence in a re-
tarded child and more of that "warm glow of success" refer-
red to earlier in research with the nonretarded. Happiness
would be the concomitant affect. Failure would present a
more complicated picture. A nonretarded individual would
undoubtedly react negatively, perhaps with sadness (lowered
self-feelings), depression (lower activity level), or anger
and hostility. The same might be expected with a retarded
person, but with confounding factors. If failure is more
"a way of life" for the retarded individual he might not
react so strongly in the negative direction. Therefore, a
research project designed to investigate the role of affect
on altruism in the retarded encounters even a larger host

What role then would a happy or sad mood have on a retarded child's willingness to share? From the literature on affect and altruism with the nonretarded, one gathers that an individual (particularly an adult—the results have been more ambiguous with children) in a happy mood would share more than a control subject who, in turn, would be more willing to share than a sad mood subject. From the literature on success and failure with the retarded, one gathers that success has an appreciable impact on performance and persistence while failure sometimes is, but sometimes is not, significantly different than a control group. Extrapolating the above into a direct prediction concerning affect and altruism, the present investigator expects an induced mood of happiness to positively affect a retarded child's willingness to share. On the other hand, an induced sad mood would make no or little difference on a retarded child's altruistic behavior.

Sharing Money as a Measure of Altruism

Both the willingness to share and the actual amount of money shared are used as the dependent measures of altruism. Krebs (1970) reported five other studies which made use of shared money as a dependent measure. Since
then the most notable study was that of Moore and colleagues (1973) at Stanford University who examined the effects of induced affects on altruism also using shared money as the measure of altruism.

The use of money as a valued object and as a potent reinforcer is attested to in a number of studies. Bruner and Goodman (1947) were among the first to explore attitudes toward money. These authors found that poor children consistently overestimated the size of coins than did rich children, thus indicating a relationship between need and perception. Rosenthal (1968), however, obtained results contradictory with the Bruner-Goodman data: i.e., the poor children had a tendency to decrease perceptual over-estimation of coin size. The economic factor was only one variable influencing perceptual estimation, the other being age. The effect was not found at all age levels between six and ten years.

The relationship of lending money to attitude similarity and the meaning of money was investigated by Golightly, Huffman, and Byrne (1972) and Wernimont and Fitzpatrick (1972) respectively. Golightly and her colleagues hypothesized that the amount of money approved for a loan applicant to a financial institution was a positive function of attitude similarity between the applicant and the lender. Graduate business students were given relevant financial information concerning a loan applicant and irrelevant infor-
formation on eight topics. The subjects were asked to indicate the amount to be approved for the applicant's loan. Results indicated that the evaluative decision to lend was, in part, determined by the similarity of the attitudes of the evaluator and the individual being judged. A relatively similar loan applicant was not only preferred but was seen as almost a $2,000 better financial risk than a dissimilar loan applicant. This effect occurred in response to irrelevant attitudinal information despite the relevant and detailed financial information. The other study by Wernimont and Fitzpatrick (1972) factor analyzed a modified semantic differential from various groups of subjects, including college students, secretaries, technicians, managers, and religious sisters. The first and largest factor these investigators called "shameful failure." By this is meant that money is potentially an indication of failure and a source of embarrassment and degradation. Other factors included social acceptibility ("money is an ok thing"), a pooh-pooh attitude ("sour grapes"), moral evil, comfortable security, social unacceptibility, and conservative business values. Differences in the meaning of money varied according to work experience, sex, and socio-economic level. These investigators draw the conclusion that one cannot make general statements about the meaning of money for the population in general. Between and within group differences are extremely marked.
Other studies with nonretarded subjects have explored the role of money as a reinforcer. Only two representative studies will be presented, for the general literature in behavior modification is replete with such investigations. Schmitt and Marwell (1972) analyzed the difference between the use of points or money as reinforcing agents. These authors found incentive-related response differences. Subjects had a choice of working on a cooperative task that entailed the risk that the Ss could take each other's money or a lower paying task. The data revealed that the pairs working for money typically ceased cooperating when risk was introduced while those working for points tended to continue cooperating. Thus, it appeared that the use of points reduced the disruptive effects of competition and risk. These authors did not give any descriptive data on their subjects. In a doctoral dissertation, Benson (1970) used ninth grade students to examine the effects of monetary rewards on reading level, attitude toward reading, and self-concept of ability and school achievement. Findings indicated that reward and nonreward classes were not significantly different on reading test scores. The attitude toward reading scales were significant in three instances, all in the direction of the nonreward program. There were no significant correlations for four selected variables, IQ levels and total amount of rewards received were not significant on any test or scale. In sum, there were no
differences between reward and nonreward conditions except in the area of attitude.

Few studies on money have used the retarded as subjects. In one of the few studies that did (Blount, 1970), 20 retarded and 20 normal subjects matched on MA and CA viewed all possible pairs of various amounts of money. The Ss were instructed to indicate their preferences and indicate which was the greater amount. In response to the first request, younger normal and lower mental age retarded subjects preferred coins to dollar bills, while older normals and higher MA retarded persons chose the largest denominations. On the second request the retarded persons who were older than the normals gave significantly more correct responses than the normals, who performed at the level of chance. The age of the retarded subjects ranged between approximately 22 to 25 years old. The investigator concluded that most clinicians have underestimated the ability of even low-level retarded persons to conceptualize money. This study indicates that the use of money in a study of altruism, affect, and social inference with the retarded is appropriate. More generally, the above studies indicate that the value of money is a sufficiently valuable commodity to indicate the size of an altruistic response. If a retarded teenager gives or if he gives much, can be taken as a fairly accurate measure of generosity.
Affect

An affect is a broad class of mental processes, including feeling, emotion, moods, and temperament. In the present research the term is used synonymously with emotion and mood. Different affects can be recognized by different behaviors (Costello & Krasinski, 1972). Given six different emotions: sadness, anger, depression, hostility, fear, and anxiety, male and female undergraduates were asked to name the behaviors they associated with the six emotions. Typical behaviors associated with anger were fighting, shouting, crying, sulking, arguing, and a few miscellaneous ones. With sadness, crying, sulking, and withdrawing were the predominant behaviors associated, although the miscellaneous category was quite large. Certain of the emotions were named by subjects as more difficult to recognize than others. These two were anxiety and depression.

The literature on nonverbal communication attests to the recognizability of emotions by an individual's body language (e.g., Ruesch & Kees, 1959). The popular literature has abounded with books which purport to give the reader the real inside "scoop" about what another person is thinking and feeling (Fast, 1970; Nierenberg & Calero, 1971). Such movements as folded arms, crossed legs, or a wink all can be interpreted as emotional expressions depending upon the social context.

It is difficult to discuss affect without considering
the psychoanalytic conceptions of its nature. A classical analytic formulation would see affect as expressions of the libidinous energy of the Id filtered through the reality principle of the Ego. Some writers (Weinshel, 1970) would make subtle distinctions between mood and affect but this is of no concern for the present discussion.

Contemporary psychology has been more physiological and cognitive when describing the nature of affect. The first to deal with affect was William James (1884). Prior to James, emotion was viewed as a causal linear agent, i.e., we cry because we feel sad. In 1884, however, James speculated that the situation was reversed. In other words, we feel sad because we cry. James said that the felt emotion was subsequent to physiological or behavioral activity. 

"... James was the first to state quite clearly that visceral processes do in fact exercise some control over the behavior called emotional" (Mandler, 1962, p. 272).

Critical of James' theory was Walter Cannon (1915). He pointed out five reasons why the viscera was not the sole controlling agent in emotions. The first is that emotional behavior is still present when the organs are separated from the central nervous system through operation. Secondly, each emotion does not produce different and corresponding physiological changes. Third is that the feedback the individual receives from visceral changes is too diffuse and indistinct to properly differentiate emotions.
Fourthly, introspective evidence of the rapidity of emotions contradicts the one or two second latency that must occur due to the body's slowness in changing states. The last is that artificially producing physiological changes through drugs does not seem to produce emotion. Cannon's points appear to have been borne out by contemporary research (Mandler, 1962).

Schachter and Singer (1962) believe that whether or not there are physiological distinctions among the various emotions must be considered an open question. Schachter has performed several experiments to determine the effects and has concluded that the cognitive components to affect are the most salient ones. He suggests that emotional states should be considered a function of a state of physiological arousal and of a cognition appropriate to this state of arousal. In one of his experiments Schachter injected adrenalin into some of his subjects and gave correct information to some concerning the drug's effects but not to others. The Ss were then asked to wait in an adjoining room where a stooge had been placed and where the confederate was laughing, jumping around, and throwing paper. The subjects that had been correctly informed of the adrenalin's effect reacted angrily, while the misinformed subjects responded with the same elation that the confederate was manifesting. Schachter interpreted his results as showing the situational variables in addition to the cog-
nitive ones. To date Schachter's cognitive theory of emotion is the most cogent in the literature.

Another relevant study was done as a doctoral dissertation (Schaffer, 1969). This study examined altruistic behavior in children as a function of differential characteristics of the recipient. There were two characteristics of the recipient chosen for examination: affective state (whether the object of help is portrayed as happy or sad in mood), and the sex of the recipient compared to the actor. It was found that perceiving the recipient as sad elicited significantly more altruistic responses than when the object of help was perceived as happy. No significant differences were found when the object was the same or opposite in sex from the subject.

The most important research in affect these days has developed from behavioral scientists that are not directly interested in affect alone. An example is the Underwood, Rosenhan, and Moore group at Stanford. Walter Mischel (Mischel, Ebbesen, & Zeiss, 1972; Mischel, Ebbesen, & Zeiss, 1973) has provided much of the theoretical background of this work. His investigations into attentional processes, particularly selective attention to the self, revealed that cognition-inducing instructions (such as "think about rewards" or "think about fun") are the very core of an individual's self-control process, and thus related to all literature in moral behavior regarding resistance to temp-
tation (Wright, 1971). Mischel's work lends theoretical credence to the idea of affect as a setting condition for altruism.

Social Inference and Affect

"Social inference" means the interpretation of cues which indicate purpose, attitude, relationships, roles, and thus, the probabilities of action within a situation. Analogous to the skill which is systematically taught and tested under the heading of "reading comprehension," social inference in part consists of learned attention to relevant cues, and, in part, the decoding of their implications. Just as one learns to discriminate letters and their combinations and to conceptualize what the words denote, so one can learn to note the social cues and cue configurations and to conceptualize their meanings, though this learning is more likely to be consequent to informal experiences than to systematic instruction. (Edmonson, de Jung, Leland, & Leach, 1974, p. 1)

Though people may physically share the same environment, their attentiveness and comprehension of social cues may differ to such an extent that, for all practical purposes, the individuals are living in different environments. This elementary statement is axiomatic on the phylogenetic scale (Bleibtreu, 1968; Endler, Boulter, & Osser, 1968). The subjective and operating environment of an organism is largely determined by the characteristics of its sensory systems, i.e., its capacity for detection of energy states and changes in the "objective" environment, and by its structural capacity for responding to such states and changes. Thus, what an adult human anthropomor-
phically calls the "environment" varies from species to species. The eyeless arachnid known as the cattle tick, for example, who conducts its life at the tip of a twig on a bush for a period of 18 years only to wait for the moment when the mammalian scent of butyric acid signals it to attach itself to a mammal, suck its blood, reproduce, and then die, lives in quite a different life space than, say, a giraffe (Bleibtreu, 1968). Similarly, individual beings, given a diversity of IQ scores, chronological ages, developmental levels, and perhaps personality types may live in different effective environments, however much in the same situation they may be.

Sociological and anthropological studies have shown that cultural norms exist in all social settings under all types of situations. Goffman (1959), in a Kafkaesque manner, has portrayed social interactions in terms of a never-ending series of "impression managements." Individuals, according to this author, are always trying to present their selves in a particular manner to others in order to create a unique and particular impression of who they are. Certain impressions are normative in certain social situations and a person, to avoid embarrassment and hostility from others, must abide by these norms. Hall (1959) has discussed how the concepts of space and time are tools with which human beings in all cultures transmit messages. For instance, Americans probably stand six to twelve inches
apart when talking in an informal, conversational manner. Middle Easterners, on the other hand, stand almost on top of each other, creating an uncomfortable conversation for someone from the United States. An American would misinterpret the close, very intimate distance of a Middle Easterner as an invasion of his personal space. Thus, cultural norms govern simple, everyday rules of personal interaction. A mentally retarded person, to be accepted by his community, must learn these rules.

Although difficulties in interpreting social cues exist in normal persons when they enter a totally new situation, they seem more pronounced in the retarded. Edmonson and her colleagues noted that interpretations of pictures by retarded adolescents differed markedly from interpretations made by nonretarded subjects. The retarded subjects were apparently unaware of social cues such as the depicted person's position in relation to another, his posture, gestures, facial expression, or dress. This interpretational deficit has been noted by others. Masland, Sarason, and Gladwin (1958) recognized that retarded persons often ignore social inferences from available cues in pictures of social settings in favor of descriptions. Thus, on a Thematic Apperception Blot a retarded person might see "a boy sitting on a chair leaning on a desk; and there's a violin on a piece of paper" for card number one. The person's interpretational deficit would make it difficult for
him to conceptualize a story from the available cues. Zeaman and House (1965) have found the retarded extremely slow in forming simple visual habits which might allow them to decode the cues, even slower than would be expected from their low MA. These authors postulate the reasons for the learning deficit lie in the area of attention. Visual discrimination learning of retarded children requires the acquisition of a chain of two responses: one, attending to the relevant stimulus dimension, and two, approaching the correct cue of that dimension. The difficulty that the retarded have in discrimination learning, they maintain, is related to the first phase of the dual process. Other studies on thinking and inference (Bruner, Goodnow, & Austin, 1956) lend to understanding of the interpretational deficit in retarded persons. What the retarded person cannot do well is classify his experience and, hence, cannot profit from social experience.

Other studies confirm the fact that retarded individuals have trouble organizing input. Sarason (1943) found the results of mentally deficient girls on the T.A.T. were concrete rather than abstract, descriptive rather than inferential. Other investigators (Butler, 1961) have confirmed the results on the Children's Apperception Test. No difference was found between responses on this projective technique and the T.A.T. Ergo, animal pictures invoke the same concrete responses as do human pictures. On both
series of pictures the stories were usually enumerative of what was on the card rather than interpretational. One investigator (Rossi, 1963) used the associative clustering method to study the development of verbal mediation in normal and retarded children. This method presents words belonging to different conceptual categories (animals, vegetables, names, and professions) in random order and instructs subjects to cluster the words properly. It was hypothesized that since the retarded have a deficit in the ability to utilize words as verbal mediators, they would not be able to cluster conceptually related words as well as normals. It was found, as hypothesized, that normals clustered more than the retarded and, clustering improved with practice over five trials. Another researcher (Stephens, 1964) compared the performance of normal and subnormal boys on structured categorization tasks. The task presented to the Ss in this investigation required them to locate items representing 25 test categories on a set of test cards when the name of each category was specified at the time of the card presentation. The task was intended to provide normative data concerning the relative number of categories possessed by normals and retarded persons. Results indicated that significantly fewer of the subnormal subjects could accomplish these tasks under the specified conditions. The author concluded that subnormal groups possessed fewer functional categories than normals.
The preceding studies emphasizing the importance of classification to the ability to infer from social cues emphasizes the direction for rehabilitation. What are the characteristics most valuable to the retarded when they are considered for community placement? Some studies (Jackson & Butler, 1963) have implied that IQ is a factor. Prediction was found to be based on four variable: age, verbal IQ, urban versus rural preadmission residence, and remaining with parents to age five. Windle (1962) reported that a higher Full Scale IQ was prognostic for release. Two areas where he felt that more research was needed were in personality factors and the subject's working ability. These studies were the basis of later work on social inference training of retarded adolescents (Edmonson, et al., 1971). Another study upon which social inference training was later based was a tutorial language program to develop abstract thinking in socially disadvantaged preschool children (Blank & Solomon, 1968). Rather than the total enrichment program advocated by some, these investigators gave specialized tutoring to facilitate abstract thinking and found significant gains compared to control groups. Social inference training grew out of this philosophy that specialized training was needed in deficit areas.

Centuries ago Aristotle observed that the human animal is predominantly a social one. In 1920 Thorndike (Edmonson, de Jung, Leland, & Leach, 1971) introduced the
idea that one aspect of intelligence was social, viz.,
the ability to understand and deal with people. Decades
later Guilford (1967) reiterated the concept of social in-
telligence in his three-way model. Social intelligence can
be related to 30 cubes under the behavioral content cate-
gory of this construct. Six of these 30 factors have been
investigated by one of Guilford's students (Cronbach,
1970). The idea of social awareness as one factor of intel-
ligence has been implicitly recognized for some time in the
field of mental retardation. The Vineland Social Maturity
Scale (Doll, 1953), for example, is widely recognized as a
measure of social competence. More recently (Leland, Shell-
haas, Nihira, & Foster, 1967), the idea of classifying
retarded persons along the lines of deficiencies in adap-
tive behavior (see the most recent definition of mental re-
tardation: Grossman, 1973) has become more widely accepted.
Adaptive behavior may be defined around three dimensions:
independent functioning of the individual, his personal re-
sponsibility, and his social responsibility (Nihira, Foster,
Shellhaas, & Leland, 1969). The American Association on
Mental Deficiency has published the AAMD Adaptive Behavior
Scale (Nihira, Foster, Shellhaas, & Leland, 1974) to meas-
ure the concept.

Thus, the retarded show deficits in adaptive behavior,
_ipso facto_. Adaptive behavior may also be viewed as the
functional probabilities of action within a situation.
Perforce then, the interpretation of social cues is a salient part of the social aspect of adaptive behavior. To illustrate this idea more graphically, one need only take an example from the research literature on altruism. Bryan and Test (1967) parked a car with a flat tire by the side of the road and had a woman standing beside it looking helpless. They were interested in seeing how many drivers would stop to offer help. Being an experiment in modeling, these researchers arranged one condition in which all drivers approaching the car had first to pass another woman driver apparently in the same plight but apparently being aided by someone who had already stopped. Under the control condition no altruistic model was helping the woman change the tire. The results showed that seeing the example of someone else's altruism significantly increased the number of drivers who stopped.

Now any individual who showed a deficiency in social inference (he need not be retarded) would have not even been able to comprehend the nature of the social situation, making the above naturalistic research not an experiment in altruism at all. The assumption made (probably valid for most drivers) was that all could infer from the social cues available what the woman's needs were. But in analyzing the situation, the individual requires comprehension of why the woman was holding a jack, why the car was on the side of the road, why one tire was lower than all the others, etc.;
simple social inferences for most, but far from all, persons.

The above situation, interestingly enough, is one of the actual ones pictured in the Test of Social Inference (Edmonson, de Jung, Leland, & Leach, 1974), an instrument designed to measure a person's learned cognitive "ability" to discriminate social cues such as the above. The Test of Social Inference (TSI) was developed in 1964 as a project to demonstrate the remediability of the social comprehension deficit of the retarded. The test consists of a series of diverse pictures of social situations accompanied by standard questions, verbally presented by the examiner, which elicit interpretations. Answers have been standardized and normed, making the instrument an achievement test for the decoding of visual social cues. To date the TSI has been chiefly used in studies of social behavior, problem solving by educable mentally retarded populations, and to assess the effectiveness of educational programs (Edmonson, et al., 1974). Interscorer reliability coefficients for trained scorers are reported as high as 0.99. Test-retest reliability for the 30-35 item form of the test has ranged from 0.74 to 0.97. The criterion problem for determining the test's validity was solved by asking what subject descriptions the TSI was related to. Four social behavior rating scales appear to be adequately related to high scores on the TSI: social acceptance, social range.
(the ease of movement in and out of diverse social settings), attentiveness, and social invisibility (the ability to fit inconspicuously into social situations) (Edmonson, et al., 1971).

The situational specificity of the TSI has not as yet been explored. The fact that the test-retest reliabilities with different populations have generally been substantial would lead one to infer that the instrument has a general stability across situations. The fact that the test is a perceptual-cognitive measure of social comprehension, however, leads one to believe that there may be subject-related situational variation on the test, similar to the findings that the Wechsler Intelligence Scale for Children manifests score fluctuations in the same child dependent upon whether he is examined by an Anglo-American or an Afro-American (e.g., Dershowitz & Frankel, 1975; Katz, Sohn, & Zalk, 1975). In an experimental induction of mood states (cf. Velten, 1968) one might expect that a temporarily induced sad mood might depress the scores of an otherwise happy child. There is little evidence at the researcher's disposal. Common observation of one's own behavior reveals that a temporary depression or sad mood lowers one's ability to discriminate social cues. A happy mood on the other hand might elevate one's social awareness. A common and reliable rule of thumb in testing children is to maximize rapport, create a comfortable and pleasant atmosphere, and
and motivate the child to his best possible performance (Palmer, 1970). Therefore, most reliability coefficients are probably attained when the child is in a positive affect state. Correspondingly, one would not expect an experimentally induced happy mood to affect test scores. A sad mood, however, might.

In exploring the above, the reader should be reminded of the test authors' caveat against the possibility of insufficient stability between the short forms of the test (Edmonson, et al., 1974). The correlation between the two forms, ignoring order of presentation, was 0.75.

Altruism and Social Inference

There are two aspects of altruism which would lead the investigator to believe that altruism is at least moderately and positively correlated with social comprehension in general and the TSI in particular. The first is that empathy and sympathetic behavior are common forms of altruism (Wright, 1971). Sympathy involves perceiving another's distress and taking steps to comfort him or remove the cause. Empathy is one component of sympathy, viz., responding to the other person's emotional expression with a similar emotional response. Studies of sympathy in children report that empathic responsiveness to others can be observed in the second year of life (Murphy, 1937) and that children are more generous in their gifts to a peer they see to be
friendless than to one who obviously has many friends (Liebert, Fernandez, & Gill, 1969). People differ widely in their capacity for empathic response and it is believed that the ability improves with age until adolescence (Wright, 1971). The age effect in childhood is due to the increasing facility for conceptual thought (Piaget, 1973). Piaget has postulated that the individual moves from an egocentric perspective (centered around the self) in infancy to a more sociocentric (centered around others) perspective in adolescence. Flavell (1970) has used the expression "role-taking activity" for the increasing sensitivity of the older child to the existence of covert perceptual, cognitive, and motivational processes in other people. Working in the tradition of George H. Mead, Hogan (1969) has developed an empathy scale based on the assumption that empathy is predicated on one's role-taking ability. For this scale 14 nonpsychologists were given the definition of empathy as an "intellectual or imaginative apprehension of another's condition or state of mind without actually experiencing that person's feeling" (Hogan, 1969, p. 308). They were asked to Q-sort 50 items chosen for content directly related to empathy. The five items selected as most characteristic of an empathic individual were the following:

1) Is socially perceptive of a wide range of interpersonal cues.
2) Seems to be aware of the impression he makes on others.
3) Is skilled in social techniques of imaginative play, pretending, and humor.
4) Has insight into own motives and behavior.
5) Evaluates the motivation of others in interpreting situations.

All five of these characteristics implicate social inference. With the retarded as subjects, DiNola (1972) found that his data did not support the hypothesis that mentally retarded children who have had a greater number of opportunities to interact socially with peers would attain more mature moral judgments. Also his data did not support the hypothesis that those children who received high social behavior ratings would attain more mature moral judgments. Independence from adult constraint was the only social behavior which correlated with the moral judgment dimension of Moral Realism. This finding supported Piaget's position. Also using the retarded as subjects, Gardner and Giampa (1970) found that in moderately, severely, and profoundly retarded children who showed inappropriate social and emotional behavior (e.g., screaming, hitting), their intellectual level showed independence from their emotional and social behavior. The data thus appears ambiguous in assuming social inference is highly and positively correlated with altruistic behavior.
Altruism has also been viewed as a form of social conformity (Wright, 1971). As pointed out in the beginning of Chapter I, social group theory views human behavior as directed by the norms and rules of both the group to which the individual belongs and the roles he occupies in the social structure. When the norms require altruistic behavior, the person will behave altruistically. In order for our social system to continue to exist it dictates that those upon whom others are dependent will behave in an altruistic fashion towards their dependents. This point raises a problem when comparing the retarded with the nonretarded. Retarded citizens have been described as a "surplus population" (Farber, 1968) and also as deviant and incompetent. There is little opportunity in the lives of most mentally retarded persons to have others dependent on them as is true with most nonretarded persons, so an altruistic act would be less expected coming from one that has never been in a nurturant role. From this perspective one would expect no relationship of significance between social inference and altruism.
CHAPTER II

METHODOLOGY

Male and female subjects were divided into six groups. The number of subjects in each group and the order of the experimental procedure for each group are portrayed in Figure 1. The experimental design used was that of a modified pretest-posttest control group design (Campbell & Stanley, 1963). The first three groups were isomorphic to the second three groups except that the former contained a "sharing" opportunity whereas the children in the latter groups did not have a "sharing" opportunity.

Sampling Procedure

The sample was drawn from junior high schools in Franklin, Union, and Madison counties in Central Ohio. The particular schools participating were Hamilton, Reynoldsburg, Groveport Madison, Deer creek, Rosemoor, Marysville, Mt. Stygler, Madison Rural, Mt. Sterling, Pataskala, London, and Plain City. Schools were selected on the basis of willingness to cooperate and availability. Sixteen schools were contacted and the 12 named gave their permission. All schools giving permission were used and all classrooms containing the subjects who met the inclusion criteria (de-
<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Order of Experimental Procedure</th>
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<tbody>
<tr>
<td>One</td>
<td>22</td>
<td>TSI (C-14) &quot;happy affect&quot; &quot;share&quot; TSI (D-14) opportunity</td>
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<tr>
<td>Males</td>
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<td></td>
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<tr>
<td>Females</td>
<td>12</td>
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<tr>
<td>Two</td>
<td>19</td>
<td>TSI (C-14) &quot;sad affect&quot; &quot;share&quot; TSI (D-14) opportunity</td>
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<tr>
<td>Males</td>
<td>10</td>
<td></td>
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<tr>
<td>Females</td>
<td>9</td>
<td></td>
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<tr>
<td>Three</td>
<td>20</td>
<td>TSI (C-14) &quot;neutral control&quot; &quot;share&quot; TSI (D-14) opportunity</td>
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<tr>
<td>Males</td>
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<td>Females</td>
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<td>Four</td>
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<td>Females</td>
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<td>Five</td>
<td>20</td>
<td>TSI (C-14) &quot;sad affect&quot; TSI (D-14)</td>
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<td>Six</td>
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<td>TSI (C-14) &quot;neutral control&quot; TSI (D-14)</td>
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<td>Males</td>
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<td>Females</td>
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Figure 1. Number of subjects in each group and the order of experimental procedure.
scribed below) were used. To obtain the subjects it was necessary to get the permission of the person in charge of Special Education for the particular school. This was either the Principal or the Assistant Superintendent. Permission was also needed from the teacher of the individual classroom and each set of parents (or guardians) of the subjects. Most of the schools required the investigator to meet with the school administrators and describe the experiment in detail; others accepted a verbal description over the telephone; and still others requested a brief, explanatory letter. An example of one letter is given in Appendix A. After permission was obtained from all the school personnel, the teachers provided the number of subjects who met the criteria set by the investigator:

1) Anglo-American,

2) older than 13 years and younger than 16 years, and

3) having an IQ between 50 and 80 on either the Stanford Binet (Form L-M) or the Wechsler Intelligence Scale for Children.

In the state of Ohio all educable mentally retarded students must have IQs between 50 and 80. This fact, plus the one that most of the EMR junior high school students were Anglo-American, meant that most of the students met the inclusion criteria.

A standard letter explaining the research was drafted (see Appendix B) and given to each teacher to send home with
every child who met the inclusion criteria. Parents who gave their permission signed the letter and returned it to the teacher. Many parents called the investigator to find out more about the experiment before responding. The parents who did not respond were sent a second identical letter, carried home by the child. No response after the second letter was interpreted to mean that the parents did not give their permission.

The investigator never viewed any of the children's school folders. In addition, all results were anonymous because each child was assigned a number.

Each experimenter had given the present investigator a weekly schedule of the times that she was available, and each one went to schools the same day and time each week over a one-month span. The investigator knew at the beginning of each day the number and sex of available subjects, and how many time would permit seeing. Upon arrival at the school or the evening before, the investigator was given the names of the available subjects. These were written on the permission slips or on a small piece of paper, shuffled, and given to the experimenter of the day. Knowing what subjects were to be used the investigator would then go to the room and assign the order the subjects were to be taken. The order was sometimes based on the child's school schedule. As each was taken from the room, the subjects were assigned to groups according to the next number on the chart (see Figure 2), which had not
<table>
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<tr>
<th>Group</th>
<th>Male</th>
<th>Female</th>
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<tr>
<td>One</td>
<td>1 7 13 19 25</td>
<td>1 7 13 19 25</td>
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<td>31 37 43 49 55</td>
<td>31 37 43 49 55</td>
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<tr>
<td>Two</td>
<td>2 8 14 20 26</td>
<td>2 8 14 20 26</td>
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<td></td>
<td>32 38 44 50 56</td>
<td>32 38 44 50 56</td>
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<tr>
<td>Three</td>
<td>3 9 15 21 27</td>
<td>3 9 15 21 27</td>
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<td></td>
<td>33 39 45 51 57</td>
<td>33 39 45 51 57</td>
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<tr>
<td>Four</td>
<td>4 10 16 22 28</td>
<td>4 10 16 22 28</td>
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<td></td>
<td>34 40 46 52 58</td>
<td>34 40 46 52 58</td>
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<tr>
<td>Five</td>
<td>5 11 17 23 29</td>
<td>5 11 17 23 29</td>
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<td></td>
<td>35 41 47 53 59</td>
<td>35 41 47 53 59</td>
</tr>
<tr>
<td>Six</td>
<td>6 12 18 24 30</td>
<td>6 12 18 24 30</td>
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<td></td>
<td>36 42 48 54 60</td>
<td>36 42 48 54 60</td>
</tr>
</tbody>
</table>

Figure 2. Master chart for the assignment of subjects to groups.
been crossed out. After finishing with a subject, the corresponding number was crossed out and the next subject was assigned the next highest number on the chart until the entire chart was crossed out for both males and females.

It had been decided a priori that 120 subjects would be used in the investigation, 60 males and 60 females, 10 each in the 6 groups. An error was made in crossing out the proper chart numbers corresponding to each subject, resulting in an uneven $N$ in female groups one and two, and an overall $N$ of 121 (see Figure 1). The investigator decided to keep the data intact, neither adding nor subtracting subjects' data. Each of the 121 subjects was always seen alone by one experimenter in a private room provided by the school.

**Subjects and Experimenters**

The present investigation involved 121 13-, 14-, and 15-year-old educable mentally retarded (EMR) children, all of whom were Anglo-American. The age groups were pooled because there is little evidence that age correlates with the dependent variables. The mean chronological age of the males was 176.12 months with a standard deviation of 7.01, and of the females was 173.98 months with a standard deviation of 8.53.

Five Anglo-American females were used as experimenters. Three were college undergraduates and two were graduate students. The original pool from which they were selected
was obtained by announcing the research to a psychology class and by contacting psychology graduate students. Out of 15 possible candidates, 5 were chosen because of their adjudged responsibility and interest, their being the same race, sex, and approximately the same age, and their having flexible time schedules.

The experimenters were trained in the administration of the TSI and the experimental procedure by the investigator. During the training session the experimenters practiced the test administration and the affect induction on each other under the present investigator's supervision. Each was given a typewritten set of instructions for the exact wording of the affect induction. The Procedure section of this chapter reproduces exactly what the induction procedure was. The experimenters were carefully trained to ask the exact questions on the TSI as given in the test manual. Both a manual and the experimental procedure were handed to the experimenter each morning as she traveled to a school with the investigator. Therefore, each experimenter had the verbatim test questions and the exact wording of the induction procedure in front of her during the one hour spent with the subject.

**Instrumentation**

Two short forms (C-14 and D-14) of the Test of Social Inference (TSI) and 25 pennies given to each subject at the
beginning of the experiment were the materials used.

The TSI was described earlier in a brief manner. To re­iterate, it is an instrument consisting of 30 pictures of
diverse social situations accompanied by standard questions,
verbally presented by the examiner, which elicit interpreta­
tions. The test is not an intelligence measure nor a projec­
tive technique. It is an achievement test for the decoding
of visual social cues. The reader is directed to the test
manual (Edmonson, et al., 1974) for a comprehensive descrip­
tion of the instrument.

Edmonson and her colleagues (1974) gave the TSI in its
original 35-item form or in its later reduced 30-item form
to various samples of retarded pupils in public school spe­
cial education classes, retarded residents in a private
school, out-patients in a rehabilitation center, residents in
state institutions for the retarded, and to nonretarded pupils
attending public school classes. Five samples of public school
EMR pupils, three samples of institutionalized EMR residents
in state institutions, and five samples of nonretarded public
school pupils provided normative scoring and interpretive
data for the TSI (Edmonson, et al., 1974, p. 6 and Chapter 7).

The intersample comparisons revealed similarity of the
frequencies of scores obtained by the samples of nonretarded
adolescents, lower performance of the public school EMR ado­
lescents, and the still lower performance of the institution­
al residents, private school residents, and rehabilitation
outpatients (Edmonson, et al., 1974).

The relationships of TSI scores to sex indicated that mean differences in scores significantly favor males, despite the fact that the rank order correlation of items ranked for difficulty for each sex was .92 (Edmonson, et al., 1974).

Pearson product moment correlation coefficients between TSI scores and IQs range from .27 to .61, with a median coefficient of .48. The correlation of TSI scores with chronological age was very small for each sample, the median product moment coefficient being only .08 (Edmonson, et al., 1974).

Reliability of the TSI is examined in the test manual (Edmonson, et al., 1974). Interscorer reliability for trained scorers for the TSI is in the high .90s. The tests were scored by four trained persons. Each subject's TSI was always scored by one person. Test-retest reliability for special education groups has ranged from .84 to above .90. The present investigation uses junior high EMR students. For this population all test-retest reliability coefficients exceeded .90. Retest coefficients for nonretarded adolescents ranged between .74 and .82. The retest correlations of the short forms were .74 and .75.

Validity of the TSI was established through correlations of scores with other subject descriptions (Edmonson, et al., 1974).

Although related to IQ, particularly to the WISC subtests of Comprehension and Vocabulary, TSI scores have been more closely related than IQs
to assessments of acceptance by peers, ease of participation in diverse settings, social skills, independent functioning, and attitude toward work. Two studies independently yielded very similar moderate correlations between TSI scores and social maturity as measured by the Vineland and correlations with scores on an experimental social problem solving test yielded generally similar coefficients.

TSI scores are not related to ratings of appearance, physical development, withdrawal, disruptive behavior, nor to scores of self concept or Locus of Control. They are less closely related than IQs to ratings of academic achievement and industriousness in the classroom setting. (p. 21)

For validity coefficients of the reader is again directed to the test manual.

Procedure

An experimenter brought a subject individually to a separate room and said:

We're testing some new pictures and we're asking some of the boys and girls in your room to help us. For helping us today we're going to give you 25 pennies that you can use any way you want to.

The experimenter opened the envelope with the subject's name on it and showed it to the subject. She placed the money aside and continued (for the three "share" groups, i.e., groups 1, 2, and 3, only, otherwise the TSI was given):

Some of the kids in your class are not going to get a chance to help us and earn the money. Later when I leave the room you can share some of the pennies with your friends or the kids who do not get a chance to help us. You will be able to share by putting some of your new pennies in that jar (the experimenter points to a jar that already has 10 pennies in it). Of course if you do not want to share your money you do not have to. First let's look at the pictures.
The experimenter administered the first short form (C-14) of the Test of Social Inference. After finishing, all children were given the 1) "happy mood" induction, 2) the "sad mood" induction, or 3) the control group instructions. For the "happy" and "sad" groups the experimenter said:

Now before we finish the pictures I want to try something with you. I want you to tell me something that really makes you happy (or sad, depending upon the group), something that makes you feel good (or sad). That's right, _____ is really fun (or "is not very fun"). You really feel happy (sad) when ____. What else makes you happy (sad)? That's right. That's a lot of fun ("not very happy either") too. (The child was given time to talk about the experiences each of the two times.) You pick one of those things we just talked about and think about how it makes you feel. They would make most children in your class happy (sad). You think about how happy (sad) that made you feel.

The experimenter waited ten seconds and asked the child if he was able to think about that happy (sad) time. If the child said "yes" the experiment went on.

If the children were unable to think of any appropriate experiences the experimenter responded, "Well, some children have said that things like _____ have made them happy (sad). Has anything like that ever happened to make you happy (sad)?" producing several examples until the child was able to generate examples on his own. If at any time children in either the "happy" or "sad" conditions gave examples which seemed to reflect the wrong emotion, the experimenter responded, "That sounds to me as if it makes you angry (or whatever) rather than sad (happy). Can you think of something that
makes you feel really sad (happy) but didn't make you feel angry (or whatever the wrong emotion was)?"

In the control condition the child was told that he should count slowly for 30 seconds.

If during the "sad" mood condition the child thought of any event which was too upsetting (such as "when my father died"), the child was asked to think of something else and focus on an event which was still sad but less distressing.

For the three "share" groups only, after finishing with the "happy," "sad," or control conditions the experimenter excused herself, saying that she forgot to get something. The subject was reminded that "you can share your money with your friends or other kids in your class by putting some of your pennies in that jar, but you don't have to."

Now the second short form (D-14) of the TSI was given. The child was told that the experimenter would like to finish finding out about the pictures. After the test the child was escorted back to his room.

Data Analysis

Six 3 x 2 analyses of variance were performed. Two analyses were conducted to address the research question, "Does mood or sex have a significant effect on the number of pennies shared and also on whether or not an individual will share?" The other four analyses of variance (two on groups 1, 2, and 3, and two on groups 4, 5, and 6; see Figure 1)
were performed to address the question, "Does mood or sex have a significant effect on the difference between the number passed and the total scores on the first short form (C-14) compared to the second short form (D-14) of the TSI?"

Multiple comparisons (Scheffe, 1959) were then worked out on the F-tests reaching the .05 probability level to determine which groups differed from each other at less than the .05 level.

Pearson product moment correlations were done also to address the questions, "Is there a significant correlation (relationship) between the number of pennies shared and TSI scores, and if yes, how large and in what direction is the correlation?"

Two problems were encountered in the data analysis concerning how to treat the two dependent variables of 1) pennies shared and 2) TSI scores. "Pennies shared" could be the actual number of pennies given, varying from zero to 25, or it could be a yes-no situation, i.e., the child deposited or he did not. Both manners of treating this variable were used because they each gave different information. "TSI scores" could be treated as 1) number of pictures passed (i.e., two or more creditable inferences = "pass") or 2) total score. The total score is a more discriminating measure because each picture can receive a score from 0 to 4, while with the number-of-pictures-passed technique a picture can receive only a 1 (for "yes") or a 0 (for "no"). Both manners of treating
this variable were used.

The fixed effects model was the one used in the six analyses of variance. This model is one of three types underlying the analysis of variance (Ferguson, 1966). In a two-way ANOVA such as the one used in the present study (sex X group) the row main effect and the column main effect are fixed, that is, in repeating the experiment the same levels of those variables would be used. The choice of this model determines the procedure for testing row, column, and interaction effects. The reader should see standard textbooks such as Hays (1973) or Ferguson (1966) for the mathematical formulae. Experiments to which the fixed effects model applies are distinguished by the fact that inferences are to be made only about differences among treatments actually administered, and about no other treatments that might have been included (Hays, 1973). The fixed model error term is required in order to calculate the $F$ ratios, as the variables under investigation were selected on a nonrandom basis.

The three assumptions made in using the fixed effects analysis of variance were as follows (Hays, 1973):

1) For each treatment population, the distribution of the random error associated with the particular treatment-subject combination is normal.

2) The errors associated with any pair of observations are independent. And

3) Samples are drawn from populations whose variances are equal.
The third assumption is often called that of homogeneity of variance. It may seem quite sensible to carry out a test for homogeneous variances before using the ANOVA, and some statistics books advocate these procedures (e.g., Minium, 1970). The current trend in statistics, however, is to refrain from this practice (Hays, 1973). Hays (1973) points out that the analysis of variance is a "robust" inferential technique, meaning that departures from normality may be accepted to a greater degree than with other inferential statistical tests.

A test for homogeneity of variance before the analysis of variance has rather limited practical utility, and modern opinion holds that the analysis of variance can and should be carried out without a preliminary test of variances. . . . (Hays, 1973, p. 484)

Consequently, the writer did not test for homogeneity of variance.
CHAPTER III

RESULTS

Chapter III is divided into three sections corresponding to the three hypotheses of the study. Rather than merely reporting whether the data obtained a certain significance level it is felt far more useful to report the smallest significance level at which the null hypothesis of no difference could not be found tenable. This procedure adjusts for some of the criticisms in the psychological literature concerning the use of statistical significance tests (Morrison & Henkel, 1970). Essentially the argument runs that treating null hypothesis significance tests as if they warranted decisions permitting either acceptance or rejection of the null hypothesis from the experimental data is untrue. "... the primary aim of a scientific experiment is not to precipitate decisions, but to make an appropriate adjustment in the degree to which one accepts, or believes, the hypothesis or hypotheses being tested" (Rozeboom, 1970, p. 221). Very rarely does the behavioral scientist's data warrant that the conclusions be entirely accepted or rejected. Instead the data available permit conclusions of a "certain degree of belief" (Rozeboom, 1970, p. 222). In other words, the evidence for conclusions
drawn is not in the nature of an either/or decision but rather a continuum of probability. Meehl (1970), Bakan (1970), and, most recently, Cronbach (1975) have all voiced similar criticisms. Thus, the present author believes that it is far more fruitful to give the reader the smallest probability level at which the null hypothesis can be rejected rather than cite only $F$ ratios. This gives the reader a "level of confidence" he may place in the findings. The practical problem involved with this procedure is that the probability indices for $F$ tables are usually restricted to the .01 or .05 levels of probability. Even the most comprehensive tables are not calculated beyond the .25 level (Pearson & Hartley, 1958). Therefore, the present investigator has been able to give probabilities only to the .25 level and has called all $F$ ratios beyond this $>.25$.

Altruism and Affect

Hypothesis One stated that subjects in an induced "happy affect" treatment condition will be significantly more willing to "share" money and will "share" a significantly greater amount of money with their classmates than will a control group, while there will be no statistically significant difference ($<.05$) between the "sad affect" group and the control group. This hypothesis was supported at the .05 probability level for willingness to "share" and indicated a trend (.10) for amount "shared."
The raw data (Table 1) for the actual number of pennies left in the jar indicate that approximately 72% of all those in the "happy" group decided to "share," 52% in the "sad" group, and 30% in the control group. The range of pennies left in the jar ranged from 1 to 25 for males and 4 to 25 for females.

Because of unequal N in each condition, the least-square means rather than arithmetic means are given in Table 2. In terms of amounts left, the means were approximately 7, 6, and 3, respectively, for the "happy" group, "sad" group, and control group.

The two analyses of variance performed to examine the effect of "mood" on "sharing" are presented in Tables 3 and 4. The reader is referred to the Data Analysis subsection of Chapter III for a full discussion of the assumptions and the manner of treatment of all the ANOVAs.

The two analyses of variance performed on the dependent variable "sharing" indicated that the main effect of group was the only effect yielding substantial information to the investigator. Sex and the interaction of group and sex revealed F ratios so negligible that no available statistical tables contained probability levels with figures that small (i.e., < .25). The probability is very high that one could accept the null hypothesis of no difference for these latter variables. The main effect of group varied according to the manner in which "sharing" was interpreted. If one considers the dependent variable as whether or not the subject decided
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Number of Pennies "Shared"

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Table 2

Means and Standard Errors of Amount "Shared" and Decision to "Share"

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<th>Condition</th>
<th>&quot;Share&quot; Versus No &quot;Share&quot;</th>
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<tr>
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<td>Standard Error</td>
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Table 3
Effect of Mood and Sex on "Share" vs. "No Share"

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<th>M.S.</th>
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<td>15.93</td>
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Table 4

Effect of Mood and Sex on Number of Pennies "Shared"

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to "share," then the probability level reached the traditional .05 level. Scheffe multiple comparisons were performed to determine which of the three groups differed at the .05 level from each other. Only the "positive affect" group was greater than the control group at the .05 level. Differences between the "happy" and "sad" groups and the "sad" and control groups did not reach the .25 probability level.

When the amount of pennies deposited in the jar was used as the dependent variable the probability level was .10, indicative of a trend.

Social Inference and Affect

Hypothesis Two stated that subjects in an induced "sad affect" treatment condition will have significantly (.05) lower scores on the posttest short form (D-14) of the Test of Social Inference compared to the pretest short form (C-14) of the Test of Social Inference, when scores are treated as either number of items passed (i.e., two or more creditable inferences) or as total scores. This hypothesis was not supported, but did indicate a trend (.10) in the stated direction.

The means and standard deviations of the two short forms of the TSI, alone and in combination, treated as both number of items passed and total scores, are portrayed in Table 5. The scores are very similar to those given in the test manual for public school EMR students. The roster of scores for each
Table 5

Means and Standard Deviations of TSI Scores for Groups 4, 5, and 6

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<th></th>
<th>M</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number passed on C-14</td>
<td>5.57</td>
<td>2.74</td>
</tr>
<tr>
<td>Total score on C-14</td>
<td>17.62</td>
<td>5.66</td>
</tr>
<tr>
<td>Number passed on D-14</td>
<td>5.35</td>
<td>2.57</td>
</tr>
<tr>
<td>Total score on D-14</td>
<td>16.86</td>
<td>5.58</td>
</tr>
<tr>
<td>Number passed on entire TSI</td>
<td>10.88</td>
<td>4.82</td>
</tr>
<tr>
<td>Total score on entire TSI</td>
<td>34.20</td>
<td>10.65</td>
</tr>
</tbody>
</table>
subject is listed in Appendix III.

Four 3 X 2 (group X sex) analyses of variance were done, two on Groups 1, 2, and 3 and two on Groups 4, 5, and 6 (see Figure 1), in each pair using first the number of items passed (that is, a creditable inference score of two or more) on each short form of the TSI and secondly using the total score on each short form of the TSI. The dependent variable was always the difference between the first short form (C-14) given at the beginning of the experiment (pretest) and the second short form (D-14) given at the experiment's end (posttest).

The first two ANOVAs on Groups 1, 2, and 3 yielded probability levels of .25 or above. One would feel quite confident in accepting the null hypothesis that "mood" had no effect on TSI scores when subjects were given an opportunity to "share." The results of Groups 4, 5, and 6 (where there was no "sharing" opportunity) indicated that when the number of items passed was the dependent variable the main effect of group and sex and the interaction of group and sex had F ratios at only the .25 probability level. Once again the null hypothesis may be accepted with a high degree of confidence. When TSI difference scores were used as totals with Groups 4, 5, and 6, however, the main effect of group reached a probability level of .10. Table 6 gives the data when TSI difference scores were used as totals for Groups 4, 5, and 6. A Scheffe multiple comparison indicated that the "sad" group (Group 5) was lower than the control group (Group 6) at the
Table 6

Effect of Mood and Sex on Total TSI Difference Scores for Groups 4 ("happy"-no "share"), 5 ("sad"-no "share"), and 6 (control-no "share")

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>60</td>
<td>1008.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Mean</td>
<td></td>
<td>3.27</td>
<td>3.27</td>
<td>0.20</td>
<td>&gt;.25</td>
</tr>
<tr>
<td>Sex</td>
<td>1</td>
<td>13.06</td>
<td>13.07</td>
<td>0.80</td>
<td>&gt;.25</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>90.03</td>
<td>45.02</td>
<td>2.75</td>
<td>&lt;.10</td>
</tr>
<tr>
<td>Sex X Group</td>
<td>2</td>
<td>18.63</td>
<td>9.32</td>
<td>0.57</td>
<td>&gt;.25</td>
</tr>
<tr>
<td>Remainder</td>
<td>54</td>
<td>883.00</td>
<td>16.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Differences between the other groups were beyond this .10 level.

**Altruism and Social Inference**

Hypothesis Three stated that a significant, positive, moderately high correlation (relationship) is predicted between amount of money "shared" and total TSI scores, when scores are treated as either number of items passed or as total scores.

Pearson product moment correlations indicated that the number of pennies deposited in the jar and TSI scores were positive and significantly different than zero (Table 7) at the .05 probability level. The correlations, although positive and differing from zero at less than the .05 level, were only .27 and .25. Therefore, this hypothesis was supported only in part, viz., although there was a statistically significant (p < .05) positive correlation between amount of money shared and TSI scores, it is questionable whether the correlation should be termed "moderately high."

**Experimenter Bias**

After the data analyses were complete, a question arose concerning the possible effect of experimenter bias. Therefore, four two-way analyses of variance (experimenter by group) were performed to partial out the effects. The two dependent measures of altruism were the number of pennies "shared" and the decision to "share" or not to "share." The
Table 7
Pearson Product Moment Correlations between
Number of Pennies "Shared" and Total TSI
Scores (TOT) and Items Passed (PASS)

<table>
<thead>
<tr>
<th></th>
<th>TOT</th>
<th>PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennies &quot;shared&quot;</td>
<td>$r = .27^*$</td>
<td>$r = .25^*$</td>
</tr>
</tbody>
</table>

*p < .05*
two manners of treating TSI scores (i.e., number passed and total score) were the other dependent variables.

Results indicated no probability levels reaching .05 for experimenter effects for three of the four dependent variables. The number of pennies "shared" was the one variable which showed an interaction between experimenter and group at the .05 probability level (F=2.81, 8/46df). Testing for simple effects using the method of Least Significant Difference (Snedecor & Cochran, 1967) indicated that three of the five experimenters accounted for the significant interaction. One experimenter manifested differences between means for her sad and control groups and between her happy and control groups at the .05 level. The second experimenter manifested differences between means for her happy and sad groups and between her sad and control groups at the .05 level. The third experimenter revealed differences between means for her happy and control groups and her sad and happy groups at the .05 level.

Experimenter effects will be discussed in Chapter V. It should be stated clearly, however, that these results do not nullify the other results because they were obtained with only one dependent variable.
CHAPTER IV

DISCUSSION

Assumptions

All of the results must be viewed from the writer's theoretical perspective. Therefore, before discussing each particular result a general discussion is proffered.

The assumption that depositing pennies in a jar is an adequate measure of altruism or that thinking of happy or sad experiences is an adequate definition of a happy or sad emotion is an assumption of construct validity, or at the least, construct explication. Nunnally (1967) provides a comprehensive analysis of construct validity and construct explication with which the writer agrees. The forthcoming discussion, therefore, draws heavily from Nunnally's book.

Leaving pennies in a jar and thinking of happy and sad experiences were the variables which had been chosen to measure altruism and emotion. Are these accurate or valid? This is an empirical question which, in the end, can only be answered by empirical research. Nevertheless, the manner these variables have been used in the present research is, the writer believes, appropriate, as will now be discussed.

Nunnally (1967) reminds the reader that the degree to
which it is difficult to validate a measure of a psychological variable is proportional to the degree to which the variable is abstract. Altruism and emotion are highly abstract variables and, thus, difficult to measure. A concrete and simple variable to measure would have been something like reaction time, which could easily be measured by the length of time taken to press a button when a bell rings. Altruism or emotion, on the other hand, are more abstract and should be termed constructs. By calling these constructs, the writer implies that they do not exist in single, isolated, and observable behaviors. Therefore, putting pennies in a jar would be only one possible measure of a construct termed "sharing." The same would hold true for defining a happy or sad emotion. By sticking only to a pure description of the measure of altruism or the definition of happiness or sadness is to paint a faulty picture of science because it suggests that science is concerned only with particular observables. No one really cares whether or not a 13, 14, or 15-year-old EMR pupil will leave pennies in a jar. The particular measure is of interest only to the extent that it represents conduct in a variety of situations that all concern the construct under question (in this case altruism and emotion). Whether these measures do, in fact, accurately measure the constructs can only be answered empirically. But this is no reason for not using them.

Altruism as a construct has a large domain of related
observable constructs which are loosely defined (Krebs, 1970). Other measures in addition to the observable measure of pennies left have been the number of envelopes made for a recipient, the weight of candy left, the frequency of volunteering to give blood, the amount of help volunteered for a charitable cause, the frequency of volunteering for a stress experiment, the frequency and speed of reporting another's epileptic seizure, and the frequency and speed of reporting smoke, among many others.

The particular measure of "sharing" pennies can be thought of as having a high degree of construct validity depending on the extent to which the results obtained from the present study would be the same if some other measure in the entire domain of related observable variables of altruism had been used. The investigator believes it would, but, once again, this is a question for future researchers. Quotation marks have been used throughout the study to indicate that the observables of depositing pennies in a jar or thinking of experiences only tentatively measure altruism or define emotion.

In order to develop and validate a measure of altruism for the purpose of construct validity (the forthcoming is also applicable to affect) three procedures adopted from Nunnally's book are required.

The first is to specify precisely the domain of observables. So many diverse measures of altruism have been used
in the past that this will be no easy task.

The second is to determine the extent that the observables correlate with each other or are similarly affected by experimental treatments. How would depositing pennies with a different explanation affect "sharing"? Or how would coming to the aid of a friend correlate with "sharing"? Or how would a different "affect" induction procedure influence "sharing"?

The third is to determine whether the measure acts as though it measures the construct, that is, by determining whether or not a supposed measure of a construct correlates in expected ways with measures of other constructs or is affected in expected ways by particular experimental treatments. For example, how is altruism related to feelings of guilt?

Seldom, if ever, is this step-by-step procedure followed (Nunnally, 1967), and perhaps it is not even necessary.

In fact, Nunnally believes that construct explication is a more strictly correct method than construct validity. This is due to one flaw in the three-step process described above, namely, that it assumes that altruism, emotion, or any other abstract construct has objective reality beyond that of the particular observables used to measure the construct. Thus, altruism (or affect) is not "out there" to be discovered in the world. Altruism is merely a word, accurate to the extent that it communicates to other psycholo-
gists the kind of observables that are being studied. Depositing pennies in a jar in response to the study's experimental procedure is one of a set of particular observables. To further explicate the construct future studies should attempt to identify correlations among the observables in the entire set of observables which makes up the term "altruism." This would form what Nunnally (1967) calls the "internal structure" of the construct. The next step is to identify the "cross structure" (Nunnally, 1967) between variables in the set of elements (observables) making up altruism with another construct's internal structure (e.g., social inference or affect). When relations among cross-structures are identified scientific progress is being made. Therefore any criticism of measurements of affect or altruism are made because the psychological literature has not satisfactorily identified the internal structure of these constructs. Even the construct "social inference," although measured by a "valid" test (Test of Social Inference), has an internal structure which may be improved and cross-structures to be discovered. The results of the investigation may be viewed then as an attempt to identify cross-structures between observables of three constructs. To wait until all internal structures are built would cripple psychology, for progress is made through taking risks which are not always the smooth, step-by-step progression which logic dictates. Therefore, while the three constructs' internal structure is still open
to investigation the exploration of cross-structures is, meanwhile, a fruitful endeavor.

Altruism and Affect

Hypothesis One stated that subjects in an induced "happy affect" treatment condition will be significantly more willing to "share" money and will "share" a significantly greater amount of money with their classmates than will a control group, while there will be no statistically significant (.05) difference between the "sad affect" group and the control group. This hypothesis was supported at the .05 probability level for willingness to "share" and indicated a trend (.10) for amount "shared."

Many of the EMR junior high school subjects were willing to "share" under the conditions described in the experimental procedure. Although more research is needed to determine whether there are significant (.05) differences between a retarded student's willingness to "share" and a nonretarded student's willingness to "share," there are some tentative conclusions about the sample which can be drawn from the present experiment.

The results suggest that a transient, experimentally induced "mood of happiness" can have significant effects upon a retarded (as it has with the nonretarded, e.g., Staub, 1970) person's "altruistic" behavior. The ephemeral experience of "positive affect" made retarded junior high schoolers
more willing to deposit pennies in a jar when an explanation was offered that the money would be left for their classmates. To a lesser degree retarded students in an induced "happy mood" were also more "generous" in the amount of money they left. "Happiness" was a setting condition for "altruism" in the present sample. Furthermore, the decision to "share" rather than the amount "shared" appears to be the critical observable parameter in this form of "altruism." In light of the introductory discussion of the present chapter on observables, the finding that two such highly interwoven observables as decision to "share" and amount "shared" yielded different results emphasized the complexity of delimiting the internal structure of the construct "altruism."

A further finding is that a "sad mood" did not have a significant (.05) effect upon the sample of EMR junior high schoolers' "generosity." There were no significant differences at the .05 level, either in the amount "shared" or the decision to "share" from a control group that was in the neutral "affect" condition. This finding suggests that in the present sample "affect," *per se*, is not a setting condition for "altruism," but that "positive affect" is. The scientific explanation for the differential effect of "happiness" and "sadness" is open for investigation. Tentatively, the writer believes that the results support Isen's (1970) contention that happiness entails a "warm glow of success," which leads an individual (retarded or nonretarded) towards
prosocial action. "Sadness" may have no effect (as in the present findings) or it may have a dampening effect on altruism (see Krebs, 1970).

It is interesting to compare the present findings with the results obtained by Moore and colleagues (1973). These investigators also used 25 pennies as their dependent variable, along with "positive," "negative," and control group "affect" conditions. The means they obtained were 5.00 for the "positive affect" group, 1.14 for the "negative affect" group, and 2.71 for the control group, with an overall mean of 2.95. The approximate overall mean in the present study was approximately 5.56. A general question raised by the difference in data is whether the educable retarded in the present sample were more "generous" than a normal sample of second and third graders.

An important question is raised by the findings. Should altruism in the retarded be encouraged or even permitted? In the nonretarded altruism is usually viewed as the most noble form of behavior. In the retarded, however, there is some evidence available that altruistic behavior should not be encouraged. Educational efforts should perhaps be directed towards teaching the retarded to act with self-interest. Research supports this position for very pragmatic reasons, namely, that the retarded individual's social and occupational adjustment is usually quite precarious (Goldstein, 1964; Nihira & Nihira, 1975). Nihira and Nihira (1975) have sur-
veyed the adaptive behavior of community placed retarded persons. From 1,252 incidents of problem behaviors reported, 203 were judged to contain jeopardy to the placed individuals. Seventy-seven percent of these incidents involved jeopardy to health and/or safety. In 79% of all incidents the jeopardy was to themselves. The current national trend of expanding community care and services rather than traditional residential institutional care demands rethinking of the problems of jeopardy in community placement. It may indicate that clinicians have a primary responsibility to teach their retarded clients to stay out of trouble rather than to help others in trouble. Altruism may be a luxury the retarded individual can ill-afford.

The fact that a happy mood may increase the likelihood of altruistic conduct may call for a social cue training program along the lines that Edmonson and her colleagues (1971) used with an institutional population of retarded persons. "Keep out of trouble and avoid it at all costs, regardless of how you may feel" could be the shibboleth of such a program.

What may be an answer to problems of community jeopardy is to shift the focus of attention from a retarded person's altruistic behavior to the community's altruistic behavior. Locating an "altruistic other" who would act as a benefactor to whom a retarded person can turn in times of crisis is particularly crucial. Edgerton (1967) has identified bene-
factors (i.e., normal persons who help the community placed retarded person with his/her many problems) as one salient factor in successful community adjustment. These benefactors often

... provide welcome assistance with the practical difficulties of coping with everyday problems, with the multifold problems of passing, and even with the delicate need for denial. This assistance is of immense importance in the lives of ex-patients. (Edgerton, 1967, p. 172)

Edgerton has given the reader revealing sketches of benefactors in the lives of 48 retarded persons in his study. Some benefactors were spouses, some relatives, some friends, and some employers.

The aid of benefactors is not limited to problems of coping. Two aspects of successful adjustment for a retarded person are what Edgerton calls "passing" and "denial." Edgerton has found that a retarded person has a strong desire to conceal his/her identity as "retarded," and to deny constant reminders of incompetence. Benefactors aid the retarded greatly in this area. The process is like that of supplying supportive therapy upon demand. And it is most effective. Workers in the area of mental retardation should attempt to identify benefactors for a retarded person before placement. Whether the benefactor is acting altruistically might be an interesting problem for future investigators.

Social Inference and Affect

Hypothesis Two stated that subjects in an induced "sad
affect" treatment condition will have significantly (.05) lower scores on the posttest short form (D-14) of the Test of Social Inference compared to the pretest short form (C-14) of the Test of Social Inference, when scores are treated as either number of items passed (i.e., a score of two or more) or as total scores. This hypothesis was not supported by the results, although findings indicated a trend (.10) in the stated direction.

The emotions of the retarded have usually been viewed from a pathognomic perspective, that is, from a perspective of emotional disturbance and its relationship to mental retardation. The present research investigated the normal dimension of "emotion." The particular results of the investigation indicated a trend toward lower scores (at the .10 probability level) on the TSI resulting from a "sad mood." The .10 level is high enough for concern that "sad moods" may affect not only TSI scores, but other tests also. Even if only TSI scores would be affected, concern should be present that "sad moods" may cause dampened ability for social inference. Because social inference appears to be related to social adjustment (Edmonson, et al., 1974), it behooves the clinician to familiarize himself with the determinants and correlates of sadness in the retarded in the community.

Edgerton (1967) has graphically portrayed a group of retarded ex-patients who had been placed in the community.
His phenomenological study enables the reader to see the tragic elements in a retarded individual's life which arise from the attempt to act normal. The emotion of sadness is infused throughout Edgerton's portraits.

Edgerton's book indicates that three central concerns crystallize in the retarded ex-patients' lives: how to make a living, the proper management of sex, marriage, and reproduction, and the ways in which leisure can best be utilized.

Occupationally the ex-patients remain in a precarious and anxiety-filled position. Their demonstrated ability to perform well on a job originally was the salient factor which permitted them to leave the state hospital in the beginning. Few of the 48 former patients were unemployed in the study. Nevertheless, these retarded persons were highly marginal economic performers. Most were in debt, few had any appreciable job security, and fewer still had any marketable job skills. Kitchen work in restaurants, work in sanitariums, janitorial service in a variety of locations, or domestics in homes were the unskilled positions attainable by the majority of the ex-patients. A lucky few were housewives. These occupations would place these retarded persons in the lower end of the socioeconomic spectrum with all the depressing hardships that lower class existence entails.

Sexual behavior for the former patients was often a troublesome matter. Sexual matters were an ever-threatening source of conflict with the community. Improperly managed
sexual desire often lead to prostitution, promiscuity, child molestation, rape, venereal disease, or interpersonal conflict. Some of the former patients did attain a normal and stable sexual or marital pattern, but it was evident that skills in managing sexual conduct is an important area to develop if the retarded are to avoid frustration, depression, and self-jeopardy.

The leisure time of the ex-patients seemed surprisingly normal. If Edgerton's group seems surprising it is only because one might expect the retarded persons to be impoverished in avocational ways as well as vocational ways. Nevertheless, sports, television, and social intercourse provided the former patients with a great deal of happiness and joy.

Edgerton (1967) devotes a large section of his study to the problem the ex-patients had with seeming to be normal. The label of mental retardation itself causes much sadness and humiliation to all those so designated. Edgerton's research demonstrates that much of the former patients' lives are directed toward the purpose of denying that they are, in fact, mentally incompetent and unable to manage their own lives. To understand the process of social inference, one must realize that the social cues which constantly demand the attention of these retarded are directed toward proving their self-worth. Passing as normal and denying mental incompetence requires an inordinate expenditure of energy. It may be that the sadness and depression which the post-
hospital experiences sometimes engendered lowered these retarded individuals' ability to infer proper social cues, making the attempt at passing as a so-called normal more difficult, and also caused further depression, all in a vicious cycle. The essential elixir necessary in the lives of almost every successful patient was an altruistic benefactor.

Another interesting line of inquiry stemming from the trend in the present study showing that a "sad" mood lowers TSI scores is the relationship between sadness and depression. Depression appears to dampen the facility to differentiate social cues (Malmquist, 1972). Sadness may have similar effects, particularly with the retarded. A not unreasonable speculation is that sadness and depression lie along the same continuum. An implication of this viewpoint for the psychometrist is to ensure that a retarded child has not entered the testing situation in a temporarily depressed frame of mind. Not that the actual ability deteriorates, but motivation is lowered. This principle holds true for the psychological assessment of all children.

Altruism and Social Inference

The hypothesis concerning the relationship between social inference as measured by the TSI and the amount shared was not fully confirmed. Although the correlation was significantly different than zero and was in the positive direction the coefficient itself was practically negligible. There is
thus little relationship between altruism as measured in the present investigation and social inference. In hindsight this is not surprising. The amount of money shared was significantly affected by the treatment conditions at only the .10 level of probability. In the Discussion section on altruism it was maintained that the decision to share or not to share turned out to be the relevant dependent variable. Amount of pennies shared were usually in denominations of conventional coin size, for example, 5 cents (nickel), 10 cents (dime), or 25 pennies (quarter). Once the youngsters had made the decision to share the amount appeared to have little relevance.

Further research on altruism and social inference should use other measures of altruistic behavior. Social inference is a perceptual-cognitive construct while altruism is primarily a behavior one. The research reviewed in Chapter I concerning moral development and mental retardation clearly indicates that there is a relationship between cognitive and moral development. Perhaps the relationships between cognitive-moral development and a prosocial behavioral orientation need to be analyzed in a different manner. The introduction stressed the need for a behavioral approach to these empirical questions rather than exclusively a cognitive-developmental one. Ergo, instead of discussing moral development as if it were solely a cognitive construct, behavioral scientists might begin to explore the construct of
prosocial behavior further. A moral society must have citi-
zens who not only think morally but behave so. With the re-
tarded, however, teaching altruism is a difficult issue and
may not be in their best interests.

One suggestion for further research in the relationship
between altruism and social inference is through the con-
struct of empathy. Earlier it had been pointed out how em-
pathy is both a behavioral and cognitive construct. Hogan
(1969) has developed an empathy scale for adults. A similar
scale for children would be of great value.

**Experimenter Bias**

The post hoc analysis for experimenter effects found a
significant (.05) interaction between experimenter and group
when amount of money was the dependent variable. Because this
experimenter effect occurred with a dependent variable that
had not resulted in significance in the original data analysis,
none of the results are nullified. In fact, the post hoc
analysis suggests that had there not been experimenter bias
the main effect of group for amount shared may have reached
the .01 level of significance.

Explanations for the present effect are fourfold. First,
is the possibility that had there been a larger N in each of
the 15 cells (5 experimenters X 3 groups) the effect might
not have reached significance. Some of the cells, for
example, had only two subjects in them. Thus, a few overly
generous subjects might have produced a spurious effect.
Second, the personality of each experimenter might have produced the significant interaction. Although the methodological procedure was well standardized, a possibility exists that a slight emphasis in intonation here or an encouraging smile there may have resulted in a significant difference in how each experimenter handled her groups. A third possibility is that the experimenters did not follow the procedure as each had been instructed. Lastly, subjects may have been sensitive to the "demand characteristics" (Orne, 1969) of the study and reacted accordingly. Each experimenter was blind to the investigator's hypotheses, but may have had her own ideas as to the study's hypotheses, thus creating a situation which gave the subjects unintentional kinesic or paralinguistic cues.

In recent years there has been a growing interest in the possibility of a general threat to the internal validity of behavioral research—the so-called experimenter bias effect (Rosenthal & Rosnow, 1969; Neale & Liebert, 1973). Campbell and Stanley (1963) have made the distinction between the external validity of an experiment (How far can one inductively infer beyond the immediate results of a study?) and the internal validity (Did in fact the experimental treatments make a difference in this specific instance?). An experimenter effect threatens the internal validity of all research. Unintentional experimenter expectancy effects have been demonstrated in research on animal and human learning, psycho-
physical judgments, reaction time, projective tests, laboratory interviews, and person perception (Rosenthal, 1969).

It is not surprising, therefore, to find experimenter bias effects in research with the retarded. Hollis (Note 2) has demonstrated that young profoundly retarded institutionalized children show a change in the frequency of self-body manipulations and stereotyped movements as a function of social stimuli, such as the presence or absence of peers and adults. Interpersonal stimuli, therefore, may be regarded as relevant factors in the development and control of social behavior at even the low level of functioning witnessed in the profoundly retarded. Peers and adults have also been found to be differentially effective reinforcers in performance tasks with the retarded (Terrell & Stevenson, 1965; Harter & Zigler, 1968). Lastly, the presence or absence of a partner with severely retarded children has been demonstrated to affect such social behavior as food-sharing and cooperation (Hollis, 1966). These studies are merely suggestive of the interpersonal sensitivity of retarded individuals. Future researchers would be well-advised to control the possibility of obtaining experimenter bias effects in their data.

In the present study, experimenter effects may have confounded a highly significant \( (p < .01) \) result from the effect of a "happy mood" on number of pennies "shared." The .01 level of significance was obtained as a main effect of group but this was confounded by the experimenter effect. Although
the other analyses of experimenter bias revealed very high levels of probability ($> .25$, thus not nullifying any other results), there is always the possibility that higher levels of significance in the original analysis would have been obtained had the experimenters not increased error variance.

**Limitations**

The most serious limitation of the present study is a limitation shared by much laboratory experimentation, viz., to what degree can the findings be generalized? In a refreshingly candid discussion of nonsystematic departures from random sampling, Scott and Wertheimer (1962) claim that research projects which meet the conditions of random selection of sampling units exactly and can prove that the conditions have been met are remarkable exceptions rather than typical examples. "By far the largest portion of empirical studies are performed on samples which do not, strictly speaking, satisfy the assumptions of the statistical theory of inference" (Scott & Wertheimer, 1962, p. 216). These authors point out that an almost inevitable source of departure from random sampling occurs in the failure of some subjects to be studied. Human subjects may refuse, be too sick, or not be at home. This fact is particularly true in research similar to the present one, where the investigator must get permission from schools and parents. A nonrepresentative sample is almost insured every time a parent says
that his/her child may not participate.

The present sample was drawn from consenting families in selected classrooms in available school districts, in a single state, and thus cannot be assumed representative of all EMR pupils at the junior high school level. This approach is the most cautious one, although no one knows what the probability of a Type I error is for generalizing to only the sample or a Type II error for generalizing to all junior high EMR pupils. Scott and Wertheimer (1962) clearly state that, regardless of nonrepresentative sampling, if

... a sizeable number of readily available subjects perform in an essentially identical fashion with respect to the attributes one is studying, then it seems appropriate to presume, in the absence of specific reasons to the contrary, that a randomly selected sample would behave the same. (p. 218)

Because the present study is unique in that it has taken contemporary work on affect and altruism with nonretarded subjects and combined it with work on social inference in the retarded, the best approach is the cautious one in generalizing only to the sample or to other samples which are highly similar. If subsequent research on different samples corroborates these findings then one may place more subjective confidence in the generality of the results.

The above discussion of induction is particularly important in research in developmental disabilities. Hallahan and Cruickshank (1973) reviewed 42 studies concerned with the efficacy of perceptual-motor training with the learning
disabled and found only 7 which were designed properly. In these seven studies subjects were not randomly assigned to each of the groups because of practical limitations, but Hallahan and Cruickshank's critique points out that although this is a potential source of invalidity, it is not necessarily the sine qua non of sound experimental design. These writers reiterate what the present writer gives credence to, viz., that in psycho-educational research of a practical nature the opportunity for perfect random assignment of subjects is a rarity. Behavioral scientists should bear this in mind and should be as concerned with Type II errors (undergeneralization) as they traditionally have with Type I errors (overgeneralization).

The operation indicating altruism in the present experiment was the depositing of pennies which had been given the subject by the experimenter. A discussion of the assumptions of this operational definition is in the beginning of this chapter. It is conceivable that the results might differ with other experimenters and with variations in the instructions, but it is not probable. Only minor experimenter bias effects were partialled out in the analysis and the instructions used in the study were those used in other studies (e.g., Underwood, Moore, & Rosenhan, 1973) and are increasingly being used in similar research (Fry, 1975; Harris & Siebel, Note 1; Rosenhan, Underwood, & Moore, 1974).

The fact that the subjects had a clear concept of the
value of money is difficult to reasonably deny. The present investigation has built on past work (Blount, 1970) which studied retarded person's knowledge of U.S. monies. Results indicated that institutionalized retarded young adults of a mental age of approximately 42 months had trouble differentiating coins of different denominations from dollar bills, but institutionalized retarded young adults of a mental age of 66 months could do so proficiently. All of the EMR subjects in the present study had higher mental ages and, in addition, there was only one coin denomination used, making discrimination far easier. The technique of using 25 pennies in the manner used in the study has been used with non-retarded elementary school children as young as seven years (Rosenhan, et al., 1974).

Lastly, whether leaving pennies in the manner described in the experiment is "really" altruism (rather than compliance) is a spurious issue, as the beginning of this chapter has argued. What is at issue is whether leaving pennies is a particular observable which scientists find to fit the internal structure of the construct "altruism." Replication and further study will provide the answers.

Conclusions from the Discussion

The fact that a briefly induced "happy mood" increased "altruistic behavior" in the sample may have clinical implications if the study is replicated with similar samples.
Particularly, teaching altruism is a complicated question which should be addressed by clinicians working with the retarded because it may not be in the best interests of retarded persons. If a happy mood is a setting condition for the entire population of educable retarded persons then this fact should be taken into consideration when educating for or against altruism.

Determinants and correlates of sadness were discussed. Clinicians should be careful in the future when they are testing retarded youth. A possibility exists that "negative affect" may lead to depressed test results.

Social inference is positively related to altruism in the sample, but the magnitude of the correlation must be researched using other measures of altruism.

Finally, behavioral scientists interested in social and personality determinants of behavior in the retarded should concern themselves with experimenter bias, because their results may be spuriously attributed to treatments when, in fact, they have been confounded by experimenter differences.
Summary

Moral behavior has been a continuing concern of the human species and psychology in particular. One aspect of moral behavior is altruism. Because altruism has both a cognitive and a behavioral component to its definition it is particularly suitable in research with the retarded, more so than moral reasoning or moral judgment, which are solely cognitive. Affect is sometimes cited as a setting condition for altruistic conduct. Social Inference may be a correlate. The present investigation examined these constructs.

There were three hypotheses:

1) Retarded subjects in an induced "happy affect" treatment condition will be significantly (.05) more willing to "share" money and will "share" a significantly (.05) greater amount of money with their classmates than will a control group, while there will be no statistically significant difference (.05) between the "sad" affect group and the control group;

2) Retarded subjects in an induced "sad affect" treatment condition will have significantly (.05) lower scores on
the posttest short form (D-14) of the Test of Social Inference compared to the pretest short form (C-14) of the Test of Social Inference, when scores are treated as either number of items passed or as total scores; and

3) A significant (.05) positive, moderately high correlation will be obtained between amount of money "shared" and total Test of Social Inference scores, when scores are treated as number of items passed or as total scores.

Sixty male and 61 female public school educable mentally retarded 13, 14, and 15-year-old children were used in the study. They were assigned to six groups. Group one experimentally induced "happy" affect and had an opportunity for "sharing." Group two induced "sad" affect and had a "sharing" opportunity. Group three was a control group, but also had an opportunity for "sharing." Groups four, five, and six were "happy," "sad," and control groups respectively, but had no "sharing opportunity." In all six groups a pretest and posttest social inference measure was given.

Results supported Hypothesis One at the .05 level when altruism was operationally defined as the decision to "share" or not to "share." A trend was indicated in favor of the hypothesis when altruism was the amount "shared."

Hypothesis Two manifested a trend in support of the prediction that "sad" affect would depress Test of Social Inference scores, but it did not reach the .05 level of
significance.

Hypothesis Three was supported in part. There was a significant (.05) and positive relationship between amount "shared" and Test of Social Inference scores, but the correlation was low.

The discussion focused on how the findings could be utilized in rehabilitation and training efforts with the retarded, and implications for adaptive behavior.

Sources of Error

There are three potential sources of error in the investigation: sampling error, nonrandomization, and experimenter bias.

Due to real world constraints, subjects were not selected in a simple random fashion. Laws in the state of Ohio require the consent of the school and the consent of parents before pupils may be used in research. Finding one's way into the role of the subject was not a random event in the experiment. Therefore, generalizations should only be made to the sample in the present study. A further discussion of this issue is presented in the Limitations section of Chapter V. A replication of the experiment is needed so that inferences can be made to all educable mentally retarded persons.

Experimenter bias manifested itself with one of the four dependent variables. Although the results were not nullified,
error variance was maximized and potentially significant results were not obtained. So as to minimize error variance inter-rater reliabilities would have been advisable and are recommended in future research in this area.

Implications

The present investigation has implications for developmental psychology as well as developmental disabilities. If one is interested in the social, personality, and stimulus determinants of altruistic behavior then the developmental antecedents of prosocial behavior should provide equal fascination. Most of the literature researches and discusses the issue of developing rather than discouraging altruistic behavior.

Staub (Note 4; Note 5) has theorized about the development of prosocial behavior in children. Any behavior that benefits another person is prosocial. Interest in prosocial behavior is a dramatic switch in recent years from a thou-shalt-not orientation to a thou-shalt one in psychology. The motivation behind prosocial behavior may be either selfish or altruistic. If one gives to or helps another with the aim of gaining material reward than his behavior, although prosocial, is selfish. Altruistic motivation has as its aim only to benefit another. The socializing influences that Staub believes are important in the development of prosocial behavior are parental nurturance, parental control, induction
(pointing out to children the negative and positive consequences of their behavior), and modeling. Most of these have been widely recognized by most psychologists as important (cf. Hoffman, 1970). Staub (Note 5) has also considered additional socializing practices which tend to increase prosocial behavior. These include socializing persons focusing responsibility on children for others' welfare and actually having the children engage in prosocial behavior; and teaching prosocial behavior indirectly by having children act as collaborators in teaching others to act prosocially. The interested reader should see Staub's work (Note 4; Note 5). The forthcoming discussion is drawn from these papers.

Parental affection and nurturance have long been regarded as the **sine qua non** for not only moral development but also for a healthy personality. Nurturance makes a child feel secure and comfortable and is likely to enhance self-esteem. As a result he is more willing to give because he has more to give (in terms of his personality) when someone needs help. Self-concern or worry about the consequences (actual or potential) of one's actions are strong inhibitors to altruism (Isen, 1970). Nurturance is also likely to create a more positive attitude to people in general. A person that likes people is more apt to act prosocially towards them.

When affection and nurturance are combined with effective control, the discipline involved acts as guidelines
for the child's behavior. There is some dispute about the relative values of autonomy and control in child rearing (cf. Munsinger, 1971), but the present writer believes that autonomy without direction creates the anomie so common in contemporary Western society. This is a difficult question to research on an empirical level, but some of the literature on adolescence and juvenile delinquency (Horrocks, 1969; Halleck, 1972) appears to bear this out.

Modeling has been discussed previously. There is a plethora of studies indicating that altruistic behavior increases after modeling (e.g., Hoffman, 1970). Research on modeling has taken place from a social learning perspective but the evidence for it is so powerful that it has become generally accepted in the literature.

Positive and negative induction has been thoroughly reviewed by Hoffman (1970). Contrary to the psychoanalytic notions that state that love withdrawal is the major antecedent to the development of conscience, Hoffman focuses on the cognitive aspects of a parent's reasoning with the child. By pointing out to the child the positive and negative consequences of his actions the child develops an internalized set of values and corresponding behavior.

Another way for children to learn prosocial behavior is to act prosocially. If responsibility is assigned to children to share with their peers and they are rewarded for such actions there is a good probability that altruistic behavior
will become more automatic. In some respects altruism can be viewed as a complex set of habits. Helping a stranger up who has fallen on the stairs is sometimes as quick a reflex as is everyday politeness (Wright, 1971). Assigning responsibility in a structured manner to children, it may be postulated, would tend to increase their internal locus of control.

Indirect training of prosocial behavior is another possible means of inducing altruism. This would involve a collaborative activity where the child helps teach another how to act prosocially. Here he shares the success with his collaborator and learns incidentally how to behave in prosocial manner.

Our culture prohibits altruistic behavior in many ways, and it is these that clinicians should focus upon to discourage altruism in the retarded. One manner is through undue regard for appropriate behavior. In the course of socialization children learn rules concerning the propriety and correctness of certain types of behavior. Minding one's own business, not calling undue attention to oneself, and not behaving in idiosyncratic or eccentric ways are all inhibitory social rules. In the experiments described earlier by Darley and Latane (1970) it was described how these tendencies acted to conflict with coming to the aid of an individual in distress. A good aspect of the trend toward normalization in training with the mentally retarded (Leland & Smith,
1974) is that these tendencies are emphasized. What gets the retarded person in trouble is often his high visibility (Leland & Smith, 1965) and training efforts are directed toward making the retarded person "invisible" in his social interactions and daily behavior. This emphasis on invisibility should discourage altruism by emphasizing social norms and is a positive step.

Another threat to altruism is the tendency of persons to react in an oppositional manner when their behavioral freedom is encroached upon, or even when there is a threat of it. Discouraging altruism in the retarded through directive teaching may have a boomerang effect. Brehm (1966) has suggested that an actual or potential threat of curtailment increases the attractiveness of the threatened or eliminated alternative. Any strong experimental treatment that attempts to change behavior without the subject's desiring that his behavior be changed may produce what Brehm calls "psychological reactance." This was demonstrated quite unexpectedly by Karpf (1973) in an attempt to influence the values of college students. An adjective checklist was given of values such as "sincerity," and "considerateness." In a persuasive lecture the experimenter attempted to argue against these values as desired aspects of the self with the prediction that these aspects of the ideal self were not firmly intrenched. One week later the values argued against had become significantly stronger in the subjects' identity hierarchy rather than lower
in the rating scale. This tendency to psychological react-
ance may not be different in the retarded. A caution is thus
in order for those clinicians (e.g., Ellis & Harper, 1969)
who believe that the client should be forcefully persuaded to
give up self-defeating values (in this case it may be al-
truism).
APPENDIX A

Example of Letter to Principal or Assistant Superintendent

Ronald J. Karpf
220 E. Lane Avenue
Apartment 3B
Columbus, Ohio 43201

February 4, 1975

Dr. John Doe
Groveport Madison Junior High
4400 Glendenny Drive
Columbus, Ohio

Dear Dr. Doe:

Regarding our telephone conversation of February 3, this letter describes briefly the proposed research.

I am interested in doing research on the effects of happiness and sadness on sharing and social awareness in 13-, 14-, and 15-year old EMR students. Both boys and girls will be needed.

My assistants will see a student individually for approximately one hour in a private room in your school. A test will be given to measure the child's awareness of social situations, then happy and sad experiences will be discussed, then the child will be given an opportunity to share 25 pennies (provided by the experimenter) with his/her classmates, and finally, he/she will be given the test of social awareness again.

I would be happy to show you the test or answer questions in more detail. Please do not hesitate to call me at 297-1505. Thank you.

Sincerely,

Ronald J. Karpf
Ohio State University
APPENDIX B

Form Letter to Parents

School Office
Junior High School
5500 Main Street
Columbus, Ohio
February 17, 1975

Dear ___________________

Your child has been selected to participate in a research project designed to look at the effects of happy and sad thoughts on sharing and your child's awareness of social situations.

The research is being done as part of a doctoral thesis at Ohio State University. All of the results will be completely confidential, but we do want to get your permission for your child to participate. We would appreciate your signing the permission slip at the bottom of this letter and returning it to your child's teacher.

If you want more information about the project or have any questions of any kind call 297-1505 and ask for Ron Karpf. Thank you very much.

Sincerely,

Ron Karpf
Ohio State University

I give my permission for my son (daughter) to participate in the above research.
# APPENDIX C

Roster of TSI Scores for Each Subject

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<th>Females</th>
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REFERENCE NOTES


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