

COMPARISON OF ADAPTIVE AND MALADAPTIVE  
INSTITUTIONALIZED EDUCABLE RETARDED  
CHILDREN'S RESPONSES TO DIRECT AND  
INDIRECT SOCIAL REINFORCEMENT

By

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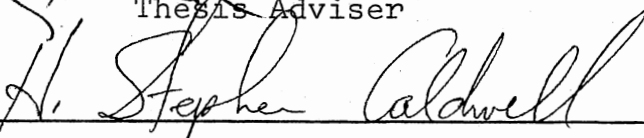
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## CHAPTER I

### REVIEW OF THE LITERATURE

#### Introduction

Mental Retardation is a multiply determined condition which historically has resisted remediation. Only since the post World War II years have the mentally retarded become of more than passing interest to the psychological researcher (Sarason and Doris, 1969). A consequence of this increased experimentation has been the view that mental retardation is reversible to the degree that the retardate's behavior can become more adaptive (Heber, 1961; Leland, 1966). Adaptive behavior is defined by Heber (1961) as the person's effectiveness in coping with the natural and social demands of his environment.

A considerable portion of man's environment consists of social stimuli. To no less degree than that of the general population is the mental retardate subjected to these environmental cues. Of immediate utility to the understanding of retardate behavior and programing for their habilitation would be a knowledge of their susceptibility to their social milieu and the role of such environmental stimuli in determining present behavior patterns. This knowledge would seem



to be of particular import with those mentally retarded who evidence no observable organic impairment (estimated to comprise 85% of the mentally deficient population; Stevens, 1965). Grossman (1973, p. 18) classifies these individuals as "Mental Retardation following psychiatric disorder or environmental influences." Other terms which frequently appear in the literature to describe this retardation subgroup are endogenous, familial or garden variety. In addition to sharing an apparent lack of an organic etiological referent these terms include an assumed measured intelligence quotient between 50 and 75. Precise application of these labels is hampered by the need to determine in the individual's history a lack of physical aberration, illness, or injury; a determination which is often impossible due to the lack of sufficient and/or reliable information. A conceptually similar term is that of educable retarded which refers to the person's academic ability and designates the same intellectual capacity appropriate for the previously discussed labels without attempting to utilize etiology as an additional criterion.

The present author concurs with the American Association on Mental Deficiency definition of mental retardation which follows:

Mental Retardation refers to significantly sub-average general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period (Grossman, 1973, p. 11).

In operational terms, intelligence, as measured by standardized mental tests, must fall at or below two standard deviations from the population mean. A similar negative deviation must exist for adaptive behavior as measured by suitable objective tests and clinical observation. These impairments must have originated during the developmental years designated as from birth to 18 years (Grossman, 1973). This thesis shall focus on the characteristics of the educable retarded who manifest no observable sensory or motor defects. Though other terms will be used to describe the retarded, the individuals discussed conform to these criteria.

#### Theories of Retardate Behavior

Research relevant to the familial retarded seems to be approached from one of two orientations. Zigler (1962) has labeled these as defect and developmental approaches. According to the former, the behavior of the retarded and their apparent differences from normal individuals are ascribed to an inherent defect possessed by the retarded. This deficiency is usually inferential in nature rather than based on objective physiological findings. The developmental approach, in contrast, suggests that the differences between normal and retarded behavior can be attributed to maturational, psychological, and social factors. Through manipulation of these variables, the differences are said to disappear; and, in some circumstances, the mentally

retarded can excell when compared to normals.

Representative of the defect theorists is Lewin (1936) who extended his dynamic field theory to the mentally retarded. He stated that the mentally retarded were less differentiated cognitively than normals of comparable age, and their boundaries between regions were also less permeable. These defects would be reflected in rigid behaviors such as perseveration. Kounin (1941) refined this formulation and hypothesized that rigidity is a monotonic function of chronological age. Although providing a plausible explanation for some behavioral characteristics of the mentally retarded, the Kounin-Lewin view cannot handle differences in performance when groups of mentally retarded are matched by both mental age and chronological age (Zigler, 1966).

Zeaman and House (1963) suggest the mentally retarded have an attentional defect which interferes with their attending to relevant stimulus dimensions. Much of their work has utilized the moderately retarded as subjects, but they venture to state that their findings should generalize to retardates of higher intellect and normals of comparable developmental levels. In countering this position, Zigler (1966) states that such defects have not been demonstrated among the familial retarded. He further objects to the sole reliance upon cognitive factors to explain differences between normal and retardate behavior.

One of the more vocal proponents of a motivational approach to the mentally retarded is Zigler (1966) who

reviewed a substantial body of research pertaining to the personality structure of the familially retarded. Central to Zigler's position is the experiential history of the mentally retarded individual. He suggests the mentally retarded, particularly the institutionalized, are apt to have experienced considerable social deprivation thus producing a greater desire for social reinforcement. Simultaneously, however, through their behavioral inadequacies, they are more likely to develop a greater wariness of others because of repeated failures in their social environment. These motives Zigler labelled respectively as positive and negative reaction tendencies.

Additional variables advanced by Zigler (1966) are "reinforcer hierarchy" and "outer-directedness." The former is an appreciation for the personal value placed on various reinforcements by the acting person. The hierarchical position of a particular reinforcer is said to be determined by the person's degree of deprivation from that reinforcer, the subject's developmental level, and finally, the frequency with which the reinforcer has been previously paired with other reinforcers. Outer-directedness refers to the familial retardate's hesitancy to use his internally derived solutions to problems with a consequent dependence upon environmentally produced directives. Described as a style of problem-solving, outer-directedness is said to derive from the retardate's high failure rate.

Cromwell (1963) reviewed extensions of social learning theory to the mentally retarded. He posits that the retardate's high rate of failure leads to a generalized expectancy of failure. Consequently, when introduced to open-ended problem situations, where both success and failure are possibilities, the retarded tend to do poorly. This performance is attributed to the failure-avoidance approach adopted by the mental retardate. Due to a high expectancy of failure, the retardate's problem-solving is directed toward stimuli necessary to avoid failure before responding to stimuli assuring success. Bailer (1961) demonstrated that not all children are capable of conceptualizing success versus failure. He found that this ability develops after a child realizes his behavior can influence external events, termed an internal locus of control, and is related to advances in mental age. This conceptualization of success and failure develops similarly in retardates but at a slower pace.

#### Adaptive Behavior

As noted earlier (see Introduction), the concept of adaptive behavior is considered important to the understanding of the mentally retarded. Originally defined by Heber (1961) and revised by Grossman (1973), adaptive behavior is considered a major diagnostic criterion for mental retardation, in addition to the more traditional intelligence level. Theoretically, adaptive behavior and intelligence

are said to be separate dimensions except to the degree of the latter's contribution to adaptivity (Grossman, 1973). As a result, the attained levels of intelligence and adaptive behavior could differ for the same individual. The possibility of adaptive behavior levels varying within an intellectual classification could have an impact on approaches to mental retardation hypothesizing an experiential history of failure. Retardates equate by mental age and chronological age could differ substantially in accordance with discrepancies between their adaptivity. Higher levels of adaptiveness relate to a greater capacity for satisfying social and environmental demands.

The literature on the relationship between intelligence and adaptive behavior is conflicting. Gardner and Giampa (1970) present evidence for the independence of intellect and adaptive behavior. They found mentally retarded subjects varying across three intellectual levels (profound, severe and moderate) did not differ in the incidence of social and emotional behavior. Nihira (1969a, 1969b) found a similar independence of most forms of adaptive and maladaptive behaviors across a wide range of ages and levels of mental retardation. The exceptions were listed as withdrawal and psychological disturbance which varied indirectly and directly with intelligence respectively. Arnold (1973) reported that direct, inverse, and independent relationships at varying degrees of statistical significance exist between intelligence and various

forms of adaptive and maladaptive behavior. He hypothesized that current measures of intelligence and adaptive behavior simply measure different aspects of a more general domain, perhaps general intelligence (Arnold, 1973). The literature does suggest the lack of a one to one correspondence between intelligence and adaptive behavior. Sole dependence on one or the other descriptive domain would fail to adequately represent the retardate's capacities.

### Adaptive Behavior Scale

In recognition of the importance of adaptive behavior in promoting a more accurate assessment of the mentally retarded, the AAMD Adaptive Behavior Scale (ABS) was designed to provide an objective measure of this behavioral dimension (Nihira, Foster, Shellhaas and Leland, 1970). The scale consists of two parts. Part I is designed to assess a person's ability to maintain personal independence in daily living. It consists of ten behavioral domains which are further sub-divided into twenty-five sub-domains. A listing of these areas is as follows:

- I. Independent Functioning
  - A. Eating Skills
  - B. Toilet Use
  - C. Cleanliness
  - D. Appearance
  - E. Care of Clothing
  - F. Dressing and Undressing

- G. Locomotion
- H. General Independent Functioning
- II. Physical Development
  - A. Sensory Development
  - B. Motor Development
- III. Economic Activity
  - A. Money Handling and Budgeting
  - B. Shopping Skills
- IV. Language Development
  - A. Speaking and Writing
  - B. Comprehension
  - C. General Language Development
- V. Number and Time Concept
- VI. Occupation - Domestic
  - A. Cleaning
  - B. Kitchen Duties
  - C. General Occupation - Domestic
- VII. Occupation - General
- VIII. Self-Direction
  - A. Sluggishness in Movement
  - B. Initiative
  - C. Persistence
  - D. Planning and Organization
  - E. Self-Direction - General
- IX. Responsibilities
- X. Socialization



Part II measures maladaptive behavior derived from personality and behavior disorders. It consists of the following 14 domains:

- A. Violent and Destructive Behavior
- B. Antisocial Behavior
- C. Rebellious Behavior
- D. Untrustworthy Behavior
- E. Withdrawal
- F. Stereotyped Behavior and Odd Mannerisms
- G. Inappropriate Interpersonal Manners
- H. Inappropriate Vocal Habits
- I. Unacceptable or Eccentric Habits
- J. Self-Abusive Behavior
- K. Hyperactive Tendencies
- L. Sexually Aberrant Behavior
- M. Psychological Disturbances
- N. Use of Medications

Two forms of the scale are available including one for children, 12 years of age or younger, and the other for adults, 13 years or older. It can be administered by any person who is familiar with the behavior of the retardate under examination. The scale was originally developed for use in institutional settings and has been standardized on approximately 2,800 institutionalized retardates from 63 institutions stratified by sex, six levels of measured intelligence and 12 age groups ranging from 3 to 60 years.

Means of Part I domain scores and their respective standard deviations are presented by 12 age ranges, measured intelligence level and sex. Part II domain scores, with the exception of domains E and M, vary independently of measured intelligence. The data for the six intelligence levels were combined to derive a single mean for each of six age groups and the sexes. Domains E and M are presented with means for each measured intelligence level, age group, and sex. The percentage of subjects receiving zero on Part II domains for each category is also listed. Mean inter-rater reliability of Part I domain scores, with attendant personnel as raters, is .74 while mean inter-rater reliability of Part II domain scores is .61 (Nihira et al., 1970). Inter-rater reliabilities of domains taken separately range from .86 for Independent Functioning to .40 for Withdrawal; Stereotyped Behavior and Odd Mannerisms; and Inappropriate Interpersonal Manners. The mean inter-rater reliability for the entire scale is .67.

Factor analytic studies of the ABS have revealed three major dimensions: Personal Independence, Social Maladaptation and Personal Maladaptation (Nihira 1969a; 1969b). Personal Independence is composed of those domains that reflect the person's competence in maintaining his personal independence and the motivation to manage his affairs. Social Maladaptation reflects a dimension of anti-social, extra-punitive behaviors. Personal Maladaptation seems defined by behaviors intra-punitive in nature.

Practical utility of the ABS has been demonstrated by two studies. Leland, Nihira, Foster, Shellhaas and Kagin (1968) found that all of the Part I domain scores discriminated adaptive levels previously assigned to retardates by clinical judgment. In a study of 260 adult retardates diagnosed as emotionally disturbed, six domain scores in Part II discriminated their psychiatric groupings despite their being matched on measured intelligence and general functioning level (Foster and Nihira, 1969).

#### Social Reinforcement

Zigler (1961) and Zigler and Williams (1963) report that institutionalized retardates are responsive to social reinforcement. These effects are related to the socially depriving nature of institutional living. Effects of institutionalization are not easily identified, however, and are said to vary according to the pre-institutional history of the individual retardate. Responsiveness to social reinforcement increases for those retardates whose previous placements were less socially depriving than the institution. The reverse is true for those who come from environments having a greater lack of social reinforcements than the institution. Klaber, Butterfield and Gould (1969) report that this responsiveness also varies from institution to institution depending on their respective social climates, with greater responsiveness exhibited in the more socially depriving institution.

McConnell (1967) also reports that the responsiveness of mental retardates to social reinforcement varies. He investigated the relationships between responsiveness to social reinforcement and personality variables among cultural-familial retardates. Subjects whose performance on a marble sorting task was easily influenced by evaluative comments of "good" or "bad" were matched with unaffected subjects. It was found that the socially responsive subjects had more statements of affect, affiliation imagery, and nurturant themes in responses to 12 Thematic Apperception Test cards. It was noted that this greater responsiveness to social reinforcement led to greater desires for socially desirable behaviors, increased anxiety about aggression and better academic performance.

Reported effects of positive and negative reinforcement on the performance of retardates do evidence some consistency. Stevenson and Knights (1962) report that familial retardates receiving positive verbal reinforcement did not increase in performance on a marble insertion game over that of subjects whose performance was not commented upon. Lingren (1967) found that verbal reproof was superior to praise in enhancing the performance of male mental retardates on a paired-associates task. Stevenson and Cruse (1961) presented repeated negative reinforcements throughout the duration of their subjects' performance until responding terminated.

Bailer (1961) suggests that children, including the mentally retarded, who can conceptualize success and failure may exhibit an enhanced effort following receipt of negative reinforcement based upon strivings to avoid failure. A beneficial effect on performance is thus posited for negative reinforcement. In total agreement regarding these effects is Marshall (1965) who, in reviewing a large body of research on use of punishment with children, found that performance consistently improved following negative reinforcement of specific acts rather than general effort.

#### Vicarious Social Reinforcement

A form of vicarious reinforcement has been studied independently by two groups of psychological researchers. This reinforcement variant is assumed operative in social situations where the participants observe one or more of their members receive verbal reinforcement for performance on a common task. The observer is said to be reinforced in an indirect or implicit manner. Sechrest (1963) designated this socially based reinforcement as Implicit Reinforcement while Weiner, Weiner, and Hartsough (1971) termed it Indirect Reinforcement. The difference between these terms would appear to be solely semantic except for the contrasting effects resulting from these independent investigative efforts. In addition, later investigators adhering to these respective positions (Barnwell and Sechrest, 1965;

Sugimura, 1965a, 1965b, 1966; Weiner and Weiner, 1973; Drummond, 1973) have replicated these varying effects to one degree or another.

Sechrest (1963) hypothesized that a person watching another overtly reinforced in either a positive or negative fashion is implicitly reinforced in a manner opposite in nature to the actual event. Ninety grade school children drawn from kindergarten, first, second and third grade classes were placed in same sex and ability pairs. Each child was given a jig-saw puzzle to complete in one of five reinforcement conditions: Explicit Positive, Implicit Negative, Explicit Negative, Implicit Positive, and Control. Following completions of the puzzle, one of the dyad was either praised (Explicit Positive) or reprovved (Explicit Negative). The observing subject was assumed to receive a negative vicarious reinforcement (Implicit Negative) or positive (Implicit Positive) respectively. No comment was made to either subject of the control group. The subjects then traded puzzles. It was found that whether the reinforcement was explicit or implicit did not affect the amount of time required to complete the puzzles. Positive reinforcement tended to decrease completion times on the second puzzle while negative reinforcement tended to result in lengthening the time needed for completion. Only the Implicit Positive differed significantly from the Control Group.

Barnwell and Sechrest (1965) found that implicit reinforcement differentially affected the performance of subjects grouped according to age. No effect was observed with first grade students while the impact on task performance of third graders was significant. Another age differential, as well as the variables of competition and sociometric status of the explicitly reinforced student, were found by Sugimura (1965a; 1965b; 1966) to influence the implicit reinforcement effect. Sugimura (1965a) observed that implicit positive reinforcement had a greater impact in facilitating the performance of sixth grade students over fourth and fifth graders. Explicit positive reinforcement led to greater performance increments with the two younger classes.

In a second study, Sugimura (1965b) confirmed an interaction between the social status of the explicitly reinforced child and implicit reinforcement effects on classmates. The study was completed over a two day period. Four classes of fourth and sixth grade students were used as subjects. Ten low status and ten high status children were selected from each grade level. On day one, all subjects completed a digit symbol task. On day two, five high status and five low status students from each class were either praised or reproved for their previous day's effort. The task was then completed again by all subjects. Those children who were recipients of implicit positive reinforcement by virtue of observing high status students being

reproved, demonstrated an enhanced performance over those receiving implicit negative reinforcement by witnessing high status classmates praised. No significant implicit reinforcement effects occurred following praise or reproof of low status subjects. Again, age was a mediating variable as evidenced by sixth graders being more influenced by implicit reinforcement than fourth graders.

Sugimura (1966) sought to determine if implicit reinforcement effects were present in both competitive and non-competitive classroom situations. The subjects were four classes of fifth grade students which contained 20 pupils of each sex. All classes performed a digit symbol task on day one. Two of the classes completed the task under competitive directions while the remainder did so under non-competitive instructions. On day two, one-half of the students in classes who experienced the competitive or non-competitive situations were praised for their performance on the previous day. One-half of the students in the remaining classes were reproved. The rest of the subjects were not informed of their previous performance. All subjects were then asked to repeat the task. Those students under competitive instructions who observed classmates verbally criticized performed better on day two than students whose classmates were praised. In the noncompetitive situation, the explicitly praised subjects performed better than the reproved and no performance difference was found between observing groups.



Research on Implicit Reinforcement (Sechrest, 1963; Barnwell and Sechrest, 1965; Sugimura 1965a; 1965b; 1966) suggests that the effect of observing another receive positive reinforcement tends to result in a maintenance of decrement of performance while observing negative verbal reinforcement produces an increment. Such factors as social status of the person receiving the praise or reproof (Sugimura, 1965b), age of subjects (Barnwell and Sechrest 1965; Sugimura 1965a, 1965b), and competitiveness of the situation (Sugimura, 1966) influence the effects of implicit reinforcement. Disparate results are reported by Weiner, et al. (1971) relative to the general findings of the effects of positive and negative implicit reinforcement.

Following the conceptual paradigm of Sechrest (1963), Weiner, et al. (1971) suggested that direct reinforcement to children within a group would have an indirect reinforcing effect on the observing children; and, that the effect of the indirect reinforcement would be opposite to that of the direct reinforcement. Indirect negative reinforcement was hypothesized to have an incremental effect on performance which is in opposition to the earlier paradigm of Sechrest (1963). Twenty-four kindergarten children were assigned to same-sex pairs and forty other kindergarten children were randomly assigned by sex into small groups of four for a total sample of sixty-four. The pairs were subjected to three treatment conditions: Direct Positive; Indirect

Negative and Neutral. The small groups experienced these conditions as well as the additional treatments of Direct Negative and Indirect Positive. The subjects were asked on day one to complete a simple copying task for six consecutive one-minute trials with thirty second rests between trials. The subjects were prevented from seeing one another's work by strategically placed partitions. Following trial three, a direct verbal reinforcement was given to one subject in the pairs or two in the small group situations except in the neutral condition where no comment was made. On day two, the subjects were asked to repeat the copying task for a total of three trials. It was found that the subjects receiving indirect negative reinforcement by observing another verbally praised performed significantly different from those in direct positive or neutral conditions. Their performance increased while the praised students did not differ from the neutral condition. Direct positive reinforcement served to maintain performance levels. These effects were maintained for both days of the study. The basic paradigm appears identical with that of Sechrest (1963); but, as can be seen, the effect, on performance, of the vicariously experienced social reinforcement is opposite to that reported by the earlier author.

Using 60 female college students, Weiner and Weiner (1973) studied differential effects of direct and indirect reinforcement further. Each subject was asked to fill in with circles the blank gridded pages of a booklet for six

two-minute trials. Subjects were randomly assigned to dyads and five treatment conditions. The latter being identical with those of Weiner, et al. (1971). It was found that negative reinforcement, whether direct or indirect, enhanced performance while positive reinforcement maintained previous performance levels. It was suggested that the unfamiliarity of the subjects with one another might account for the increment following direct negative reinforcement, a finding which was not evident in the previous study (Weiner, et al., 1971). The lack of firm interpersonal relationships was discussed in terms of the effect it might have on a subject's interpretation of the competitive relationship to her pair-mate.

An investigation of the effect of direct and indirect reinforcement on groups and non-groups is reported by Drummond (1973). The subjects were forty-eight female undergraduate students. One-half of the subjects had group associations prior to the study while the remaining twenty-four were strangers. Twelve dyads each of group members and strangers were formed and assigned to one of three experimental conditions; Direct Positive, Indirect Negative and Neutral. The subjects were required to fill in with an "X" a series of successive blanks on prepared sheets of paper. Each subject completed six trials with one member of the dyad receiving a positive verbal reinforcement after trial three in the case of the experimental condition. No comment was made in the neutral condition. Similar to

previous studies in the Direct and Indirect spirit, Drummond found the subjects receiving indirect negative reinforcement evidenced a performance increment. Positive reinforcement led to maintenance of performance. Membership in the group or non-group condition did not influence subsequent performance.

While Weiner et al. (1971) confine themselves to effects on performance, Kanfer and Marston (1963) provide support that similar effects occur with learning. These authors investigated the effect of direct and vicarious forms of human reinforcement on verbal learning in simulated groups. Each student was seated in a darkened room, given earphones and instructed to respond with any word except proper names, numbers, or phrases when the signal light blinked. Ten operant trials were completed to determine the base rates for nouns. Following these trials, all groups except two heard a taped set of responses supposedly emanating from nine other members of the subject's group. The tape content varied in terms of the presence or absence of verbal reinforcement contingent on the taped responses and the percentage of words being nouns. The same tapes were played for two groups, but the experimental condition differed as to whether or not direct reinforcement was administered to the subject. Four control groups were used to control for tape content and for administration of recorded stimuli. Reinforcements consisted of the word "good" following a noun response. Thirty acquisition trials were followed by thirty

extinction trials. It was found that only those subjects who were exposed to tapes high in noun content and received either direct or vicarious reinforcement demonstrated learning. Vicarious reinforcement significantly increased learning while direct reinforcement did not serve to enhance learning, when compared to groups not receiving direct reinforcement. In the absence of vicarious or direct reinforcement, the difference between noun content of the stimulus tapes failed to produce significant learning. During the extinction phase of the study, vicariously reinforced subjects produced more responses than subjects not receiving vicarious reinforcement. These effects, however, were suggested as perhaps attributable to the group differences in acquisition performance. It is readily observed that the vicarious reinforcement of this study can be equated to the indirect negative condition while the direct reinforcement corresponds to the direct positive of Weiner et al. (1971). The reported effects are similar in terms of negative reinforcement enhancing task performance and positive reinforcement showing no additional effects. Further, the informational nature of critical responses does not seem to be a source of explanation for the phenomena, but rather the reward value of vicarious reinforcement.

A solution to the differing results obtained by Sechrest (1963) and Weiner, et al. (1971), with reference to the effects of this conceptually similar form of vicarious social reinforcement, is not presently available.

Methodological differences in terms of tasks, experimental settings, data collection, etc., exist which might influence the findings. Marshall (1965) cites intellectual and achievement level, task complexity, instructions, strength of association, pre-experimental association, delay of reinforcement, subject's personality, experimenter, and atmosphere as variables particularly important to studies investigating the effects of punishment or negative reinforcement.

Although sparse, some evidence suggests the mentally retarded are susceptible to vicarious or observational types of learning. Fechter, (1971) found that mental retardates while failing to imitate specific acts in a modeling experiment did exhibit similar moods conveyed in aggressive versus friendly film segments. Cegelka (1972) reports incidental learning to have occurred among a group of retardates though to a lesser degree than with normals matched by mental age.

Kazdin (1973) obtained a vicarious reinforcement effect with 2 pairs of educable retardates participating in a natural classroom setting. The study consisted of four successive reinforcement conditions. A member of each dyad was given verbal praise contingent upon attentive behavior while the second subject was not addressed. This phase was followed by a reversal condition during which reinforcement was withheld. The next experimental condition involved direct verbal praise contingent upon inattentive behavior

and the final condition returned to an attentive behavior reinforcement contingency. The reinforcements did not specify the behavior being performed which elicited comment. It was observed that praise increased attentive behavior of the reinforced subject as well as the observing members of the dyad. Direct praise of inattentiveness led to a decrease in the rate of attentiveness in one subject while leading to an increment in another. Subjects observing reinforcement of inattentiveness became more attentive. The investigator posited that the subjects were responding to the cue properties of the social stimuli rather than its contingent administration to specific behaviors. Direct reinforcement was seen as serving a discriminative stimulus function for the observing subjects to emit situation appropriate behaviors.

The indirect social reinforcement paradigm was extended to a retardate population by Lippert, Weiner, and Painton (1974) to determine possible differential responses of normal and retarded children to social reinforcement. Sixty subjects were used with equal numbers of normal children and institutionalized retardates of both sexes represented. The subjects were further equated in terms of mental age. Dyads of the subjects were presented three reinforcement conditions: direct positive, indirect negative or neutral while completing a simple copying task. The task was repeated for a total of four trials, the first and second serving as a base rate, the third as the treatment,

and the fourth as post-treatment. It was found that performance increments followed receipt of both direct positive and indirect negative reinforcement. These results, which held for both normal and retarded subjects, are at variance with the findings of previous investigations using the direct or indirect paradigm. These authors suggested that the maintenance of performance found in different studies could have been due to the subject's awareness of the reinforcement contingencies practiced by the experimental agents. The only observed difference between the normal and retarded subjects was a performance decrement by the normals following trial three after indirect negative reinforcement. The retarded subjects, meanwhile, evidenced a maintenance of elevated performance under both reinforcement conditions.

#### Statement of the Problem

Important to many hypotheses concerning the behavior of the retarded (Bailer, 1961; Cromwell, 1963; Zigler, 1966) has been the concept of reinforcement history. These approaches have shared an assumption that the retarded have a history fraught with problems and difficulties which leads to their characteristic behavioral modes. This conceptualization does not consider the impact behavioral differences between retardates might have on their respective experimental histories. Grossman (1973) has stated that to the degree behaviors sampled by current intelligence tests



contribute to adaptation, measured intelligence will correlate with adaptive behavior level; but, individual differences in adaptive behavior will occur, particularly among the mildly retarded. Given that such a divergence between intelligence and adaptive behavior occurs, it seems reasonable that it would have an impact on the person's experiential history and current behavioral mode of response.

The mentally retarded have often been viewed as a homogeneous human grouping whose behavior can be adequately described by such singular concepts as mental age, intelligence quotient, rigidity, etc. The influence of several factors such as institutionalization (Zigler, 1961; Klaber, et al., 1969), personality traits (McConnell, 1967), or experiential history (Kazdin, 1973) upon retardate behavior suggests that these simplistic views are inadequate formulations. The author agrees with Zigler (1966, p. 105) who states, "...the behavior of the retarded child on any task is a complex and multiply determined phenomenon." An increasing emphasis upon the adaptive behavior of the retarded is an attempt to appreciate this complexity (Nihira et al., 1970).

The basic purpose of this study was to investigate the responsiveness of the educable institutionalized retardate to direct and indirect forms of social reinforcement. The literature has suggested a receptivity to both levels of social reinforcement (Stevenson and Cruse, 1961; Zigler, 1961; Klaber et al., 1969; Fechter, 1971; Cegelka, 1972;

Kazdin, 1973) with the data being more consistent following direct forms (Fechter, 1971; Celgelka, 1972). The motivational effects of indirect negative reinforcement reported by Weiner et al. (1971) and Weiner and Weiner (1973) have been found similar, in some instances, (Bailer, 1961; Lingren, 1967) to retardate reactions to direct negative reinforcement or punishment. Kazdin (1973) found, however, that whether direct positive or indirect negative reinforcement impinges upon the retarded, the subsequent performance levels are determined by the subject's reinforcement history. The relevant dimension of the occurring reinforcement is its cue or signaling property that a reinforcement situation is at hand.

McConnell (1967) reports that those mental retardates who are responsive to social reinforcement differ from the nonresponsive in having greater motivation to develop socially desirable behaviors, more anxiety about aggression, and better academic achievement. He relates that responsiveness to social reinforcement is developed through the behavior of primary need satisfiers, i.e., parents acquiring secondary reinforcing qualities. Having developed a responsiveness to social reinforcement, the retardate is said to adopt socially approved behaviors. Gardner and Giampa (1970) suggest that mental retardates possessing maladaptive emotional and social behaviors are less capable of profiting from exposure to learning situations due to a lowered responsiveness to social reinforcement. In view of

these studies, subjects were expected to increase in performance as adaptiveness increased. A lessened response was anticipated among subjects as maladaptiveness increased. These respective relationships were suspected to hold across direct and indirect reinforcement conditions for I.Q. and mental age matched subjects if, as hypothesized by Kazdin (1973), subjects respond to the cue or signaling aspects of stimuli that a reinforcing situation is imminent.

The A.A.M.D. Adaptive Behavior Scale is amenable to categorizing mental retardates according to their adaptive and maladaptive behavior. Part I of this scale is composed of items which measure desirable behaviors in an adaptive sense. Part II rates behaviors considered maladaptive and anti-thetical to satisfactory personal or social adjustment. Through summing these respective sections of the ABS total scores were obtained to provide separate estimates of the adaptiveness (Part I) or maladaptiveness (Part II) of a subject. As previously discussed, educable institutionalized retardates comparable in measured intelligence and mental age but divergent within adaptive or maladaptive spheres were expected to react differentially to identical social reinforcement.

Results of this study were anticipated to have considerable import with regard to current viewpoints toward institutionalized mental retardates. A receptivity to the forms of social reinforcement presented was seen as having utility in habilitative efforts, particularly if some

understanding of the role of adaptive and maladaptive behavior patterns in relation to such reinforcement was determined. With adaptive behavior proven to function as a mediator to reinforcement effects, many current conceptualizations of the mentally retarded would seem to need refinement. Regardless of the results, this study was expected to provide the basis for some insights into the role of adaptive behavior among the institutionalized mentally retarded.

#### List of Hypotheses

The following comprise a list of hypotheses examined in this research:

1. Adaptive subjects will evidence a performance increment following receipt of both direct positive and indirect negative reinforcement conditions.
2. Maladaptive subjects will evidence a performance increment following receipt of both direct and indirect negative reinforcement.
3. High adaptive subjects will have a performance increment significantly greater than low adaptive subjects following direct positive and indirect negative reinforcement conditions.
4. Low maladaptive subjects will have a performance increment significantly greater than low adaptive subjects following direct positive and indirect negative reinforcement conditions.

## CHAPTER II

### METHODOLOGY

#### Subjects

Equal numbers of male and female educable institutionalized mentally retarded adolescents were chosen for the total sample of 48 individuals. The subjects ranged in mental age from 8.0 years to 10.0 years with a mean mental age of 8.96 years and a standard deviation of .37. The mean chronological age was 15.54 years, standard deviation of 1.98 years and a range of 13.17 years to 18.08 years. Intelligence quotients ranged from 50 to 71 with a mean of 60.65 and a standard deviation of 2.67. The psychometric data were obtained from scores on the Stanford-Binet Intelligence Scale, Form L-M (Terman and Merrill, 1960). These mental tests were administered to each subject by the institution's Psychology Department within the past year as part of an annual evaluation procedure and thus were independent of the study. Each subject was also assessed by attendant personnel with the Adaptive Behavior Scale (ABS) within five months of the study for the purpose of an institution-wide population survey. Total scores on Part I (adaptive behavior) of the ABS ranged from 184 to 293

with a mean of 245.44 (standard deviation of 28.29). A total score range of 0 to 135 and mean of 27.65 (standard deviation, 123.69) were obtained on the ABS Part II (maladaptive behavior). Only those subjects who were determined to be free of gross sensory and motor deficits as based on their institutional records were selected for participation.

#### Task

The performance task selected was similar to that of Weiner, et al. (1971). It consisted of copying circles, crosses, and horizontal lines appearing in the top one-half of a 2.54 centimeters by 1.27 centimeters rectangle into the empty lower half. Normative data from Gesell (1956), Terman and Merrill (1960) and Beery (1967) indicate that accurate reproduction of the selected geometric figures is accomplished by both sexes by a mental age of four years. Data sheets of white paper measuring 35.56 centimeters by 21.59 centimeters were prepared with four rows of 25 2.54 by 1.27 centimeters rectangles arranged lengthwise on the page. The initial task sheet presented to each subject was altered for illustrative and practice purposes. The first three rectangles were completed and the next seven rectangles were segregated from the remaining items with a heavy line. Data sheets used for the remainder of the study were unaltered. See Appendix A for examples of the task sheets.

## Procedure

Permission for the subjects to participate was obtained from their respective parents or legal guardians. The subjects were dichotomized into high and low scores on both adaptive and maladaptive behavior. Each student represented two scores, one for each behavioral dimension. To allow an assessment of the effect of adaptive and maladaptive behavior upon responsiveness to forms of social reinforcement, the subjects were assigned to three treatment conditions: Direct Positive (DP), Indirect Negative (IN) and Neutral (N). Each reinforcement condition contained 16 subjects. Assigned according to adaptive behavior, each condition contained 8 subjects considered high adaptive and 8 low adaptive. These same 16 subjects were dichotomized according to maladaptive behavior and represented high and low scores within this category.

Support for considering the subjects high and low on adaptive behavior as based on their ABS Part I total score was obtained from comparing their scores on selected Part I domains to the scale's normative sample. The domains used for comparison were I. Independent Functioning, IV. Language Development, VIII. Self Direction, IX. Responsibility, and X. Socialization. These comparison domains were selected because of their being among the more reliable of the Part I domains and their representing broader behavioral spheres than the other domains. Subjects designated as high

adaptive in this study tended as a group to have domain scores greater than the mean ABS normative sample and many such elevations were above one standard deviation. In addition, the range of total scores (184 to 293) appeared sufficient for a separation into high and low groups. See Appendix B for a presentation of these comparisons.

A similar procedure was used to place the subjects into high and low maladaptive groups. The subjects were dichotomized by the median score on Part II of the ABS. The subjects' scores on A. Violent and Destructive Behavior, B. Antisocial Behavior, C. Rebellious Behavior, and D. Untrustworthy Behavior were compared to the normative data of institutionalized mental retardates. The ABS manual (Nihira et al., 1970) does not present standard deviations of Part II domain means. Rather, the means of the subjects scoring one or above are listed and supplemented by the percent of subjects receiving zero. To determine if the maladaptive groups were sufficiently separated, their scores were compared to the normative means of the entire standardization sample. To determine the total subjects in the standardization sample a conversion using the following formula was used:

$$N = \frac{B}{1 - A}$$

Where N referred to the total number of standardization subjects, A equaled the percent of subjects scoring zero and B was the number of subjects receiving a score of one



or above. A determination of the four domain means for 13 to 18-year-old male and female subjects was then completed with the formula:

$$M_m = \frac{C(B)}{N_m} \quad \text{or} \quad M_f = \frac{C(B)}{N_f}$$

Where  $M_m$  or  $M_f$  equaled the mean of each domain obtained by the total male or female standardization subjects respectively,  $C$  equaled the mean of the standardization subjects receiving a score of one or higher;  $B$  equaled the number of standardization subjects with scores of one or above, and  $N_m$  or  $N_f$  referred to the total male or female subjects, respectively included in the standardization samples. The total male subjects were determined to be 355 individuals while the total females were 306. Appendix C presents the converted normative means for the Part II domains used as comparisons.

As a group, the subjects scoring above the obtained median and comprising the high maladaptive subjects tended to have scores above the domain means of the standardization sample. The reverse was true of the subjects scoring below the obtained median. Appendix D presents these comparisons for each subject. Also, the obtained range of total scores on Part II (0 to 135) suggested that a differentiation into high and low maladaptiveness could be made.

The study was completed on two consecutive days. The subjects were not informed as to the nature of their pending

activity and were supervised by an experimental assistant prior to their participation. To avoid contaminating the naive subjects, arrangements were made to allow the subjects to return to their housing units directly from the experimental room. Subjects were run in same-sex and same-race pairs, one pair at a time. They were randomly seated at opposite sides of a 91.44 by 91.44 centimeters table. A low adjustable partition was placed on the table to prevent the subjects from viewing one another's work while still allowing eye-contact. After being seated the subjects were given a data sheet altered for illustration and practice purposes and the experimenter verbally described the task to them. The male experimenter (E), who ran all the subjects, answered any questions and then directed the subjects to do the first few rectangles up to the heavy black line of the task sheet. These initial efforts were checked by E and corrected if necessary. The subjects were then instructed not to ask any further questions, to speak to one another, or look over the partition for the remainder of the session.

After the instructional phase, the subjects completed four one-minute trials with a forty second interval separating each trial. On trial one, the subjects were instructed to begin working; and, after one minute, to stop. During the next 40 seconds, E picked up the task sheets simultaneously, looked at both; and, without comment, distributed new sheets to the subjects. The subjects were then told to begin working. After working one minute (trial two), the

data sheets were again picked up. During the 40 second rest period following trial two, however, a randomly pre-determined subject was verbally praised by E in the following manner:

Say (Subject's First Name), you've done a very good job! You've filled in a lot of these boxes.

During this reinforcement, E leaned toward the subject addressed, looked directly at the subject, and smiled. The subjects so reinforced comprised the Direct Positive group. The observing members of the dyads made up the Indirect Negative group. Trials three and four were a repetition of the procedure for trial two except no reinforcement was given after trial three. Following trial four, a reinforcement was given to the subjects in an unsystematic manner to prevent any negative emotional reactions to their participation. Subjects in the Neutral condition were run in the same manner as the other conditions except no reinforcements were given until after trial four. Trials one and two made up the pre-treatment period, trial three the treatment period and trial four the post-treatment segment. See Appendix E for a representation of the experimental design.

#### Data Analysis

The data were analyzed with two separate repeated measures analyses of covariance. The repeated measures were trials three and four. Independent variables were the three treatment conditions of Direct Positive, Indirect

Negative and Neutral and levels of adaptive or maladaptive behavior. The initial analysis was completed with subjects grouped according to the adaptive behavioral dimension in each treatment x group x trials combination. The second analysis was identical to the first with the exception that subjects were grouped in each of the experimental combinations according to behavioral maladaptiveness. The dependent variable was the number of completed geometric designs during trials one and two (pre-treatment), trial three (treatment) and trial four (post-treatment). The neutral social reinforcement condition served as a control for practice and fatigue effects as well as a comparison measure to assess treatment effects.

## CHAPTER III

### RESULTS

In each of the 3 x 2 x 2 repeated measures analyses of covariance, an adjustment for covariance was completed for between-subjects effects. Further adjustments were unnecessary since a single covariate measure (average of figures completed over trials one and two) was used for each subject. A repeated measures analysis of variance comprised the within-subjects tests in both overall analyses. Subjects were nested under each of the six treatment and respective high / low adaptive or maladaptive behavior combinations

#### Adaptive Behavior Data Analysis

The overall analysis of subjects grouped according to the behavioral dimension of adaptiveness suggested a non-significant main effect for treatment as well as trials (see Table I). A significant main effect for groups ( $F = 171.67$ ,  $df = 1 / 41$ ,  $p < .001$ ) was evidenced as well as a significant treatment x subject interaction ( $F = 5.57$ ,  $df = 2 / 41$ ,  $p < .01$ ).

TABLE I  
 SUMMARY TABLE FOR ANALYSIS OF VARIANCE AND  
 ANALYSIS OF COVARIANCE FOR COMBINED  
 DATA OF ADAPTIVE DIMENSION

Source	df	MS	F	p
<u>Between Subjects</u>				
A (Treatment)	2	410.45	.97	NS*
B (High/Low Adaptive)	1	4988.17	11.78	.01
AB	2	379.51	.89	NS
Subjects within Groups	42	423.30		
<u>Within Subjects</u>				
C (Trials)	1	2.04	.10	NS
AC	2	4.14	.21	NS
BC	1	7.04	.36	NS
ABC	2	40.32	2.07	NS
C x Subjects within Groups	42	19.40		
<u>Between Subjects (Adjusted)</u>				
A	2	98.23	1.55	.25
B	1	10883.97	171.67	.001
AB	2	353.38	5.57	.01
Subjects within Groups	41	63.40		

\* NS = Nonsignificant

Selected planned comparisons were completed to examine hypothesized treatment effects. As expected, adaptively grouped subjects increased their performance following direct positive (DP) and indirect negative (IN) reinforcement when compared to the neutral (N) condition ( $\underline{t} = 3.238$ ,  $df = 62$ ,  $p < .01$ ;  $\underline{t} = 2.364$ ,  $df = 62$ ,  $p < .05$ ). DP and IN did not differ in average performance. Figure 1 presents the average performance, pre- and post-reinforcement of combined subjects within reinforcement conditions. This figure also is applicable to maladaptive subjects combined.

HA subjects performed significantly greater on the average than LA subjects with trials and treatments combined ( $\underline{t} = 13.102$ ,  $df = 1$ ,  $p < .05$ ). Following DP reinforcement, HA subjects also excelled when compared to LA ( $\underline{t} = 5.192$ ,  $df = 30$ ,  $p < .001$ ). HA and LA subjects did not differ following IN reinforcement, however. This lack of performance difference following IN resulted in partial support of predicted differences between HA and LA subjects.

A posteriori tests were used to examine selected comparisons within the significant treatment x group interaction and the trials factor. HA subjects evidenced a greater performance increment following DP reinforcement than IN ( $q = 4.577$ ,  $df = 30$ ,  $r = 2$ ,  $p < .01$ ) or N ( $q = 7.600$ ,  $df = 30$ ,  $r = 3$ ,  $p < .01$ ). HA - IN subjects also evidenced a significant increment over HA - N ( $q = 3.023$ ,  $df = 30$ ,  $r = 2$ ,  $p < .01$ ). LA subjects did not differ across treatment conditions although they approached a significant increment

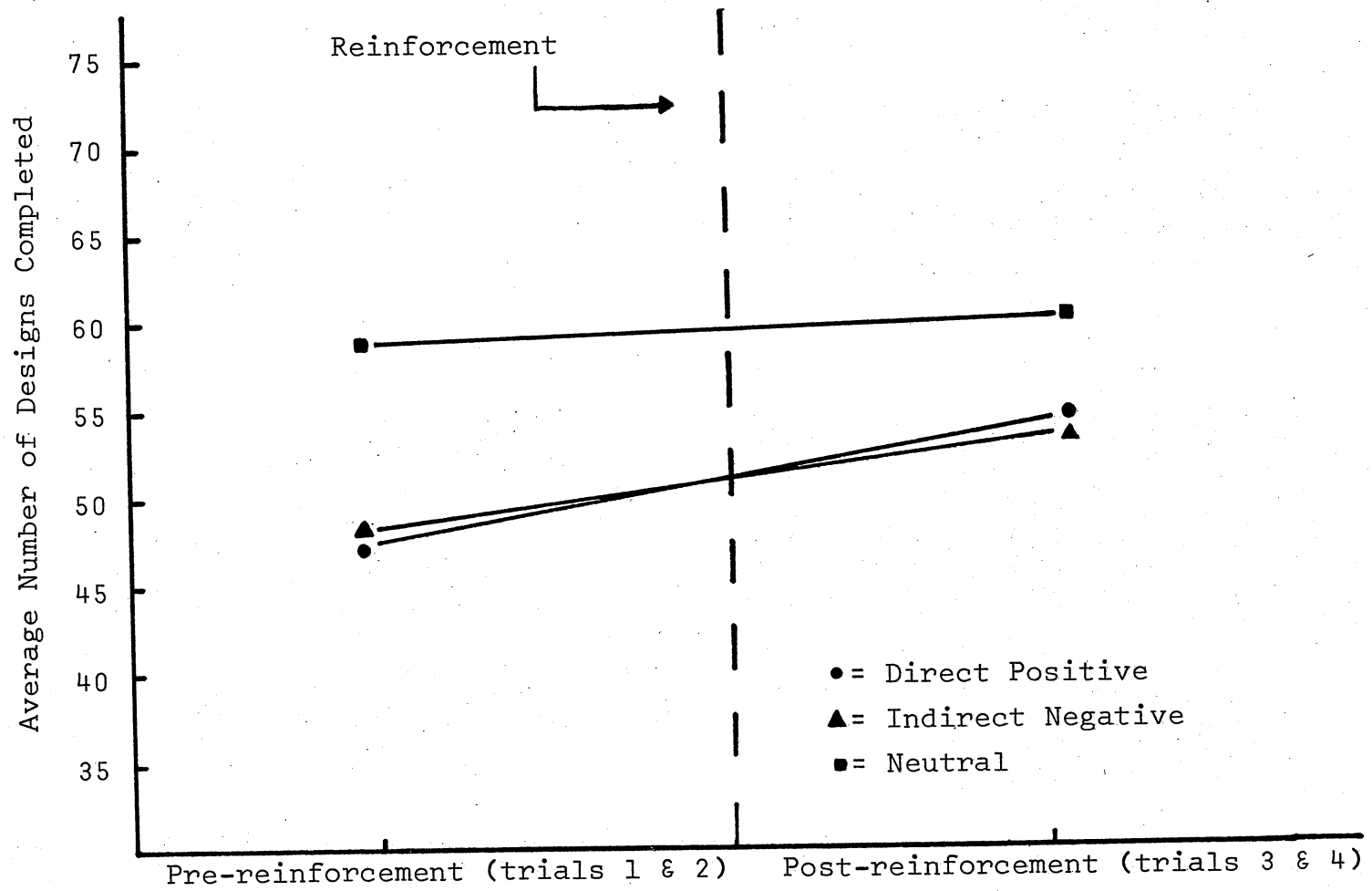


Figure 1. Average Performance Pre- to Post-reinforcement by Treatments with Subjects and Trials Combined.



following IN when compared to their average performance after DP ( $q = 2.729$ ,  $df = 30$ ,  $r = 2$ ,  $p < .15$ ). The only significant comparison within the trials factor pertained to the performance of HA - IN subjects. These subjects manifested a significant drop in average performance from trial three to trial four ( $q = 3.746$ ,  $df = 14$ ,  $r = 2$ ,  $p < .05$ ). Performance across trials did not differ for the other treatment x adaptive groups. Figure 2 presents the average performance of treatment x subject combinations across trials.

#### Maladaptive Behavior Data Analysis

With subjects distributed by maladaptiveness, the overall analysis indicated all main effects to be nonsignificant (see Table II). Hypothesized treatment and group effects were examined through a priori t - tests. With subjects combined, average performance was significantly greater following DP reinforcement than the N condition ( $t = 2.297$ ,  $df = 62$ ,  $p < .05$ ). A tendency toward a significant increment was evidenced by combined IN subjects compared to N subjects ( $t = 1.568$ ,  $df = 62$ ,  $p < .10$ ). DP and IN groups did not differ in average performance.

LM subjects, as expected, had a higher average performance than HM subjects following DP reinforcement ( $t = 1.6902$ ,  $df = 30$ ,  $p < .06$ ). No performance differences were evidenced by LM and HM subjects consequent to IN reinforcement.

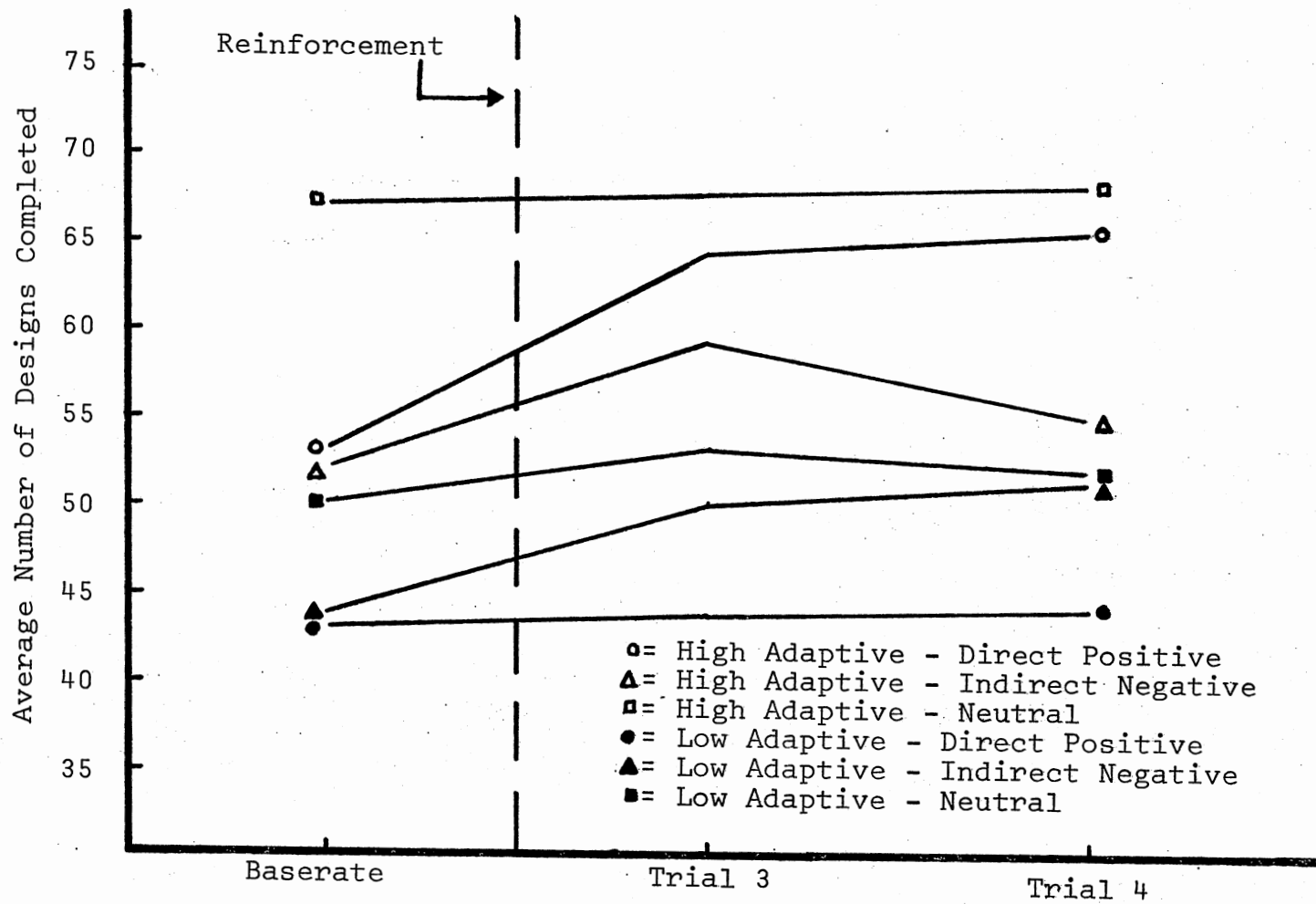


Figure 2. Average Performance Across Trials of High/Low Adaptive Subjects and Treatment Combinations.

TABLE II  
 SUMMARY TABLE FOR ANALYSIS OF VARIANCE AND  
 ANALYSIS OF COVARIANCE FOR COMBINED  
 DATA OF MALADAPTIVE DIMENSION

Source	df	MS	F	p
<u>Between Subjects</u>				
A (Treatment)	2	410.45	.76	NS*
B (High/Low Maladaptive)	1	30.38	.06	NS
AB	2	347.72	.64	NS
Subjects within Groups	42	542.86		
<u>Within Subjects</u>				
C (Trials)	1	2.04	.01	NS
AC	2	4.14	.20	NS
BC	1	.67	.03	NS
ABC	2	9.70	.46	NS
C x Subjects within Groups	42	21.01		
<u>Between Subjects (Adjusted)</u>				
A (Treatment)	2	127.54	1.46	NS
B (High/Low Maladaptive)	1	53.35	.61	NS
AB	2	36.98	.42	NS
Subjects within Groups	41	87.34		

\* NS = Nonsignificant

Selected a posteriori comparisons proved significant within the treatment x subjects component of the overall analysis. Across treatments, LM subjects were found to increase average performance following DP ( $q = 3.531$ ,  $df = 30$ ,  $r = 2$ ,  $p < .05$ ) compared to their N counterparts. LM subjects exhibited a maintenance of effort following IN. HM subjects did not display any performance changes consequent to treatment conditions. No performance changes occurred from trial three to trial four for any treatment x subject combination within the maladaptive analysis. The average performance of treatments with subjects (high and low maladaptive) and trials combined is presented in Figure 2. Performance of treatment x maladaptive subject combinations across trials is displayed in Figure 3.

#### General Considerations

The presence of a treatment by subject interaction makes the interpretation of main effects for treatments or subjects of lessened importance. The hypotheses of this study pertained to main effects of treatments, however, and were observed to receive varying degrees of support. In support of hypothesis I, adaptive subjects increased performance following both forms of social reinforcement given. The performance increment was limited to direct positive reinforcement when subjects were grouped according to maladaptiveness, thus partially supporting hypothesis II. High adaptive and low maladaptive subjects performed at an

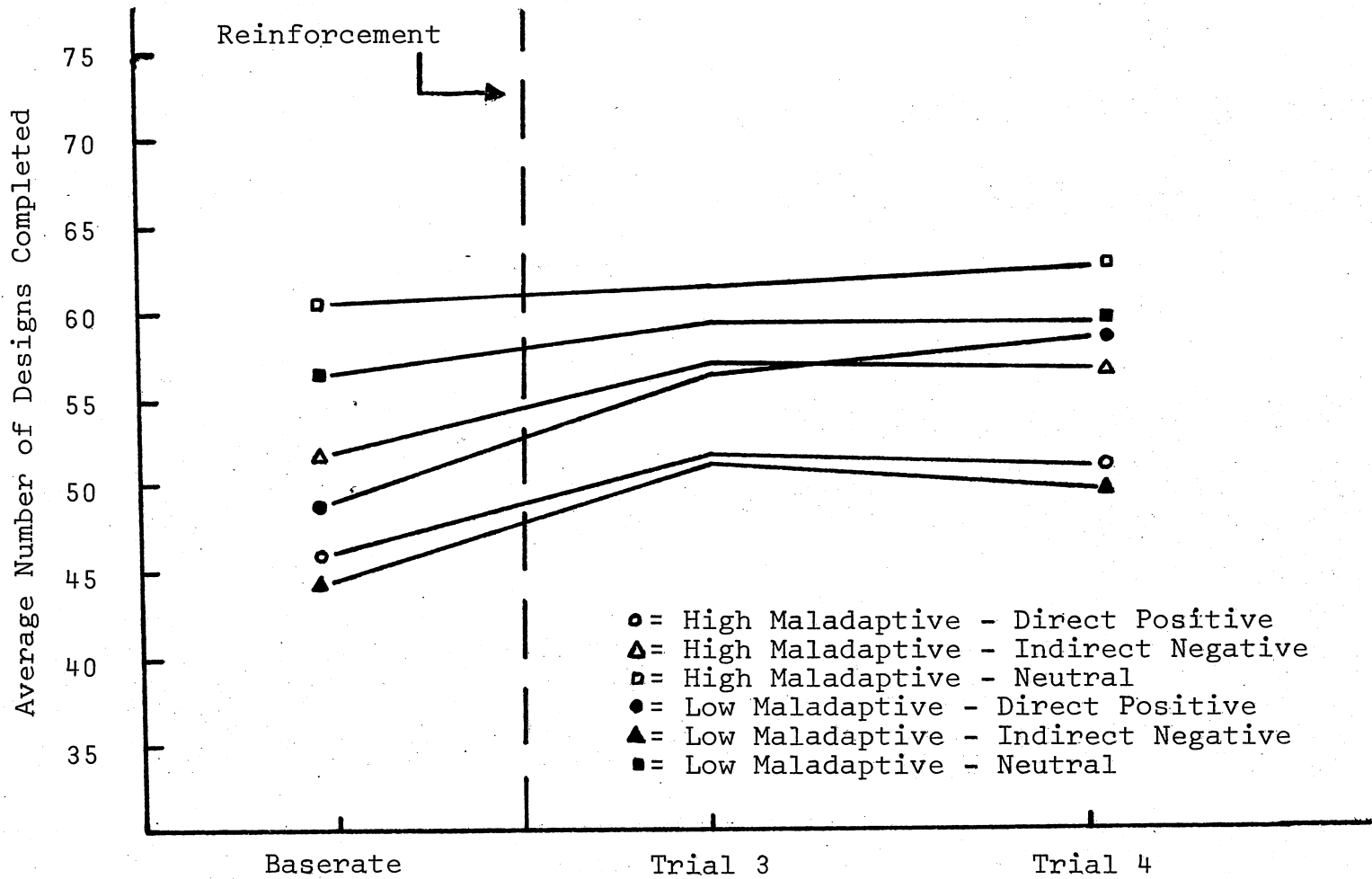


Figure 3. Average Performance Across Trials of High/Low Maladaptive Subjects and Treatment Combinations.

increased rate following direct positive reinforcement when compared to their similarly reinforced low adaptive and high maladaptive counterparts. This performance differentiation of subject groups failed to materialize following indirect negative reinforcement, however, and resulted in only partial support of hypotheses III and IV.

The elevated baserates of the four neutral groups was an unexpected result of this study. Figures 2 and 3 illustrate this feature of the data. Two aspects of the neutral groups' performance suggested their lack of change across trials was due to factors other than the study's intended control conditions. First, the neutral groups' baserates were consistently above their respective experimental groups. Second, the very high performance of the HA-N subjects raises the question of physiological limits operating to prevent changes during subsequent trials. Neither of these possibilities (systematic influences or physiological limits) seemed substantiated when experimental procedures and raw data were considered. The order of treatments was randomized to avoid such systematic influences as increased experimenter skill from operating, as well as random assignment of subjects to conditions. The general trend of all groups (experimental and neutral) was to increase in performance from pre- to post-reinforcement. This trend suggested a similarity of experimental conditions for all groups with the exception of the independent variables administered. An examination of the raw data (see Appendix G) showed individual

increases and decreases of performance occurring among the HA-N and HM-N subjects across trials. The cumulative effect of these random-like fluctuations in performance gave the appearance of physiological limits being present.

A further examination of the raw data revealed the presence of one to three subjects in each of the neutral groups whose baserates greatly exceeded those of the remaining majority of subjects. Since each neutral group consisted of only eight subjects, these atypical performances tended to elevate the means of these groups. It was observed that the medians of these groups, a measure less susceptible to the influence of extreme scores, were consistently less than the means. It was concluded that the more plausible explanation of the elevated performance of the neutral groups' baserates was a fortuitous circumstance of the study rather than due to systematic influences.

## CHAPTER IV

### DISCUSSION AND CONCLUSIONS

The performance of the different subject groups seems to be in general agreement with the expectations of adaptive behavior theorists. As mentioned earlier, behavioral deficiencies are considered to be the reversible aspect of mental retardation, a nosological condition which must feature significantly subaverage intelligence and adaptiveness, simultaneously, in order to be a meaningful description (Heber, 1961). In the current study, the performance of the subjects ranged from a lack of receptivity (high maladaptive) to a pattern of response identical to normal children of comparable mental age (high adaptive) as reported by Lippert et al. (1974). The results also demonstrated the heterogeneity of the institutionalized mentally retarded, a frequently espoused view of not only the adaptive behavior proponents, but also authors supporting a motivational approach (Nihira et al., 1970; Zigler, 1966). Further, the results suggest Adaptive Behavior Scale ratings reflect behavioral differences among the institutionalized mentally retarded which are not directly tapped by its items, i.e., responsivity to social reinforcement.



The performance displayed following reinforcement could be related to the concept of internal versus external locus of control (Bailer, 1961). Locus of control (Bailer, 1961) refers to one's perception of the factors that influence external events. An internal locus is a belief system which holds that receipt of reinforcement is the result of one's own behavior (internal determinant). In opposition to this stance, an external locus assumes receipt of reinforcement is determined by environmental events (change, other people, etc.). In order to achieve an internal locus of control, a predominantly successful reinforcement history is seen as necessary (Bailer, 1961). It can be inferred that high adaptive subjects have developed an internal locus of control. Their high ratings on the Adaptive Behavior Scale indicate acquired skills in personal independence and social adaptiveness (Nihira, 1969a; 1969b). The possession of such skills would allow them to successfully cope with their environment. Low adaptive subjects, on the other hand, would have failure histories, thus an external locus of control because of their relative paucity of adaptive skills. According to this paradigm, then, the receipt of or observing another receive reinforcement, conveys behaviorally relevant information to persons having an internal locus of control, but not to those with an external locus. In other words, to the high adaptive subjects, reinforcement is the result of their behavior (an internally determined event) and its receipt confirms the correctness of the behavior.

The low adaptive subject recognizes social reinforcements, but these stimuli do not serve as behavioral cues since the determinants of reinforcing events are external and behavior is based on internally derived (subjective) solutions.

The obtained results conform to this internal versus external locus of control model. The incremental effect of direct positive and indirect negative reinforcement upon high adaptive subjects is consistent with an apparent belief that their behavior determines receipt of reinforcement; and, once given, the reinforcement confirms the adequacy of their behavior or reveals the behavior necessary to obtain future reinforcement. To assure reinforcement in the future, an increase would be the most likely response and was the reaction observed. The performance of the low adaptives would be expected to remain unchanged after direct positive reinforcement if they do not recognize any role their behavior had in determining the event. The tendency of low adaptive subjects to increase performance following indirect negative reinforcement could be the result of task information being conveyed to another (external determinant) serving as a behavioral guide. The drop in performance of the high adaptive subjects after trial three of the indirect negative condition is inferred to be a result of their recognition that, since reinforcement was not forthcoming, the behavior chosen was in error, thus abandoned.

It is assumed the performance of subjects dichotomized by maladaptiveness can be described by the same factors outlined for the adaptive subjects. Performance differences have been noted between the adaptive and maladaptive distributions. However, similarities were observed when high adaptives and low maladaptives were paired as well as when low adaptives and high maladaptives were considered together. These similarities are inferred to be due to the first pair sharing a predominantly successful reinforcement history. The behavioral inadequacies of the second pair lead to their having a failure history in common. The basis of these success or failure histories differ, however, for adaptive or maladaptive subjects. The absence or presence of behaviors promoting adjustment determines the reinforcement history of adaptive subjects. For the maladaptives, a success or failure history is determined by the degree to which behaviors disruptive of adjustment are present.

Figure 3 illustrates that high maladaptive subjects failed to respond to any reinforcement given. Because of their disruptive behavior, they are assumed to have a failure history in eliciting contingent reinforcement and thus an external locus of control. In comparison to the low maladaptive subjects, however, these subjects are likely to be more deprived of social contact due to their objectionable behavior. Zigler (1966) observed that social deprivation among retardates served to increase the motivation for social contact which could explain the ascendance of every

high maladaptive groups' base rate over their low maladaptive counterpart as seen in Figure 3. It seems somewhat paradoxical that those subjects most desirous of social contact are the least responsive to social reinforcement in terms of performance. Perhaps due to their external locus of control, they do not see reinforcement as having significance for their behavior and remain unchanged.

The internal versus external locus of control is considered only one of several alternatives to explain the obtained results. Satisfactory explanation would seem limited, however, to those approaches which can appreciate the heterogeneity of the mentally retarded. The theorists described by Zigler (1966) as developmentalists would seem most able to meet this criterion.

The results of this study have several implications for the supervision and habilitation of the educable institutionalized mentally retarded. It is apparent that adaptive and maladaptive behavior patterns are important variables to consider in assessing the habilitative potential of the institutionalized retardate. These factors should also be a focal point in program development. Due to their greater receptivity to social reinforcement, high adaptive and low maladaptive retardates would be most likely to benefit from training situations. Low adaptive and high maladaptive retardates would be expected to do poorly. The latter individuals would perhaps overcome the handicap of poor responsiveness through a behavior modification approach designed

to endow social amenities such as praise with reinforcement significance. Following this training, low adaptive and high maladaptive subjects would be expected to benefit from normal programming where social reinforcements are an essential tool in maintaining motivation. The results demonstrate a possible explanation for the failure of some retardates to profit from training programs. Encouraging is the implication that this failure appears to be due to reversible behavioral difference rather than some intractable aspect of mental retardation. It is also noted that performance changes in this study were the result of positive reinforcement alone. A systematic use of this social reinforcement which recognizes the adaptive or maladaptive character of the retarded recipient would seem sufficient to maintain a retardate's progress in programming. A much more pleasant surrounding would be managed for both the training personnel and the retarded participants as well.

Factors which could influence the present study are multiple. Such variables as pre-institutional and intra-institutional experiences may affect performance. A consideration of the intrapersonal interactions of adaptive and maladaptive behavior patterns might further clarify the nature of a retardate's response to the class of reinforcements administered in the direct and indirect model.

## CHAPTER V

### SUMMARY

The purpose of this study was to investigate the behavioral effects of direct positive and indirect negative social reinforcement upon educable institutionalized mental retardates of different adaptive and maladaptive levels. Subjects were assigned to a direct positive, indirect negative, or neutral condition on the basis of being high or low adaptive and then reassigned according to high or low maladaptive. Subjects were run in dyads and completed four one-minute trials of a coding task. Trials one and two served as a base rate period. Between the second and third trials reinforcement was given. One subject was given verbal praise (direct positive treatment) while the second subject observed this event (indirect negative treatment). Trials three and four were post-reinforcement trials. Performance changes were measured over trials three and four. Performance was evaluated in terms of differential effects for reinforcement types or type of subject. Two separate analyses of the data were completed. The first with type of subject being high or low adaptives while type of subject was high or low maladaptives in the second.

It was found that performance was mediated by an interaction of reinforcement type and subjects. Both types of reinforcement were demonstrated capable of affecting institutionalized retardates. The high adaptive and low maladaptive were the most responsive while the low adaptives and high maladaptives were the least responsive. High maladaptive subjects did not evidence any performance changes consequent to reinforcements. High adaptive subjects, in contrast, responded to the reinforcement conditions in a fashion indistinguishable from normal children of comparable mental age reported in other research. Interpretation of the results was approached from an intrapersonal perspective and habilitative implications for the educable institutionalized retardate.

## SELECTED BIBLIOGRAPHY

- Arnold, R. E., Jr., "Adaptive behavior scales as they relate to levels of measured intellect within a state school situation." (Unpub. dissertation, University of Oklahoma, 1973).
- Bailer, I., "Conceptualization of success and failure in mentally retarded and normal children." Journal of Personality, 1961, 29, 303-320.
- Barnwell, A., and Sechrest, L., "Vicarious reinforcement in children at two age levels." Journal of Educational Psychology, 1965, 56, 100-106.
- Beery, K. E., Developmental Test of Visual Motor Integration. Chicago: Follett, 1967.
- Cegelka, Patricia T., "Incidental learning in non-retarded and retarded children." American Journal of Mental Deficiency, 1972, 76, 581-585.
- Cromwell, R. L., "A social learning approach to mental retardation." In N. R. Ellis (Ed.) Handbook of Mental Deficiency. New York: McGraw-Hill, 1963.
- Drummond, Karen L., "The effect of direct and indirect reinforcement on groups and non-groups." (Unpub. M.S. thesis, Oklahoma State University, 1973).
- Fechter, J. V., "Modeling and environmental generalization by mentally retarded subjects of televised aggressive or friendly behavior." American Journal of Mental Deficiency, 1971, 76, 266-267.
- Foster, R., and Nihira, K., "Adaptive behavior as a measure of psychiatric impairment." American Journal of Mental Deficiency, 1969, 74, 401-404.
- Gardner, J. M., and Giampa, F. L., "Behavioral competence and social and emotional behavior in mental retardates." American Journal of Mental Deficiency, 1970, 75, 168-169.
- Gesell, A., Gesell Developmental Schedules. New York: Psychological Corporation, 1956.



Grossman, H. J., (Ed.) Manual on Terminology and Classification in Mental Retardation. Baltimore: Garamond/Pridemark Press, 1973.

Heber, R., "A manual on terminology and classification in mental retardation." Monograph Supplement to American Journal of Mental Deficiency, (2nd Ed.), 1961.

Kanfer, F. H., and Marston, A. R., "Human reinforcement: Vicarious and direct." Journal of Experimental Psychology, 1963, 65, 292-296.

Kazdin, A. E., "The effect of vicarious reinforcement on attentive behavior in the classroom." Journal of Applied Behavior Analysis, 1973, 6, 71-78.

Klauer, M. M., Butterfield, E. C., and Gould, L. J., "Responsiveness to social reinforcement among institutionalized retarded children." American Journal of Mental Deficiency, 1969, 73, 890-895.

Kounin, J., "Experimental studies of rigidity. II. The explanatory power of the concept of rigidity as applied to feeblemindedness." Character and Personality, 1941, 9, 273-282.

Leland, H., "An overview of adaptive behavior as a behavioral classification." In E. Kagin (Ed.) Conference on Measurement of Adaptive Behavior: II. Parsons: Parsons State Hospital and Training Center, 1966.

Leland, H., Nihira, K., Foster, R., Shellhaas, M., and Kagin, E., Conference on Measurement of Adaptive Behavior: III. Parsons: Parsons State Hospital and Training Center, 1968.

Lewin, K., A Dynamic Theory of Personality. New York: McGraw-Hill, 1936.

Lingren, R. H., "Anxiety, praise and reproof: Their effects upon learning and recall of mentally retarded boys." American Journal of Mental Deficiency, 1967, 72, 468-472.

Marshall, H. H., "The effect of punishment on children: A review of the literature and a suggested hypothesis." Journal of Genetic Psychology, 1965, 106, 23-33.

McConnell, O. L., "Personality correlates of responsiveness to social reinforcement in mental retardates." American Journal of Mental Deficiency, 1967, 72, 45-49.

- Nihira, K., "Factorial dimensions of adaptive behavior in adult retardates." American Journal of Mental Deficiency, 1969, 73, 868-878. (a)
- Nihira, K., "Factorial dimensions of adaptive behavior in mentally retarded children and adolescents." American Journal of Mental Deficiency, 1969, 74, 130-141. (b)
- Nihira, K., Foster, R., Shellhaas, M., and Leland, H., Adaptive Behavior Scales. Manual. Washington: American Association on Mental Deficiency, 1970.
- Sarason, S. B., and Doris, J., Psychological Problems in Mental Deficiency. New York: Harper and Row, 1969.
- Sechrest, L., "Implicit reinforcement of responses." Journal of Educational Psychology, 1963, 54, 197-201.
- Stevens, H. A., "Overview." In H. A. Stevens and R. Heber (Eds.) Mental Retardation. Chicago: University of Chicago Press, 1965.
- Stevenson, H. W., and Knights, R. M., "The effectiveness of social reinforcement with normal and feebleminded children." Journal of Personality, 1961, 29, 124-135.
- Stevenson, H. W., and Knights, R. M., "The effectiveness of social reinforcement after brief and extended institutionalization." American Journal of Mental Deficiency, 1962, 66, 589-594.
- Sugimura, T., "Implicit reinforcement in the classroom." Japanese Journal of Educational Psychology, 1965, 13, 65-69. (a)
- Sugimura, T., "Implicit reinforcement in the classroom as a function of grade and socioeconomic status." Japanese Psychological Research, 1965, 7, 166-170. (b)
- Sugimura, T., "Implicit reinforcement under competitive and noncompetitive situations." Japanese Journal of Educational Psychology, 1966, 14, 211-215.
- Terman, L. M., and Merrill, M. A., Stanford-Binet Intelligence Scale. (Third Ed.) Boston: Houghton Mifflin, 1960.
- Weiner, E. A., and Weiner, Barbara J., "Differential effects of direct and indirect reinforcement." Psychological Reports, 1973, 32, 899-902.

- Weiner, E. A., Weiner, Barbara J., and Hartsough, D. M., "Effects of indirect reinforcement on performance of kindergarten children." Journal of School Psychology, 1971, 9, 284-291.
- Zeaman, D., and House, Betty J., "The role of attention in retardate discrimination learning." In N. R. Ellis (Ed.) Handbook of Mental Deficiency. New York: McGraw-Hill, 1963.
- Zigler, E., "Research in personality structure in the retardate." In N. R. Ellis (Ed.) International Review of Research in Mental Retardation. New York: Academic Press, 1966.
- Zigler, E., "Rigidity in the feebleminded." In E. P. Trapp and P. Himelstein (Eds.) Readings on the Exceptional Child. New York: Appleton-Century-Crafts, 1962.
- Zigler, E., "Social deprivation and rigidity in the performance of feebleminded children." Journal of Abnormal and Social Psychology, 1961, 62, 413-421.
- Zigler, E., and Williams, J., "Institutionalization and the effectiveness of social reinforcement: A three-year follow-up study." Journal of Abnormal and Social Psychology, 1963, 66, 197-205.

APPENDIXES

APPENDIX A

SAMPLE TASK SHEETS



APPENDIX B

SELECTED PART I DOMAIN COMPARISONS BETWEEN  
HIGH - LOW ADAPTIVE SUBJECTS  
AND ABS NORMATIVE SAMPLE

HIGH AND LOW ADAPTIVE  $S_s$  DOMAIN SCORES COMPARED  
TO ABS DOMAINS I, IV, VIII, IX, AND X MEANS

Subject	High Adaptive $S_s$			Low Adaptive $S_s$		
	+	0	-	+	0	-
1	1	4	0	0	3	2
2	2	3	0	0	5	0
3	1	4	0	0	4	1
4	1	4	0	0	2	3
5	1	4	0	0	2	3
6	2	3	0	0	1	4
7	2	3	0	1	4	0
8	2	3	0	0	4	1
9	1	4	0	0	4	1
10	0	4	1	0	1	4
11	0	4	1	0	2	3
12	0	4	1	0	4	1
13	1	4	0	0	2	3
14	2	3	0	0	1	4
15	0	5	0	0	3	2
16	1	4	0	0	4	1
17	1	4	0	0	5	0
18	2	3	0	0	4	1
19	0	5	0	0	4	1
20	2	3	0	0	5	0



HIGH AND LOW ADAPTIVE  $S_s$  DOMAIN SCORES COMPARED  
TO ABS DOMAINS I, IV, VIII, IX, AND X MEANS

Subject	High Adaptive $S_s$			Low Adaptive $S_s$		
	+	0	-	+	0	-
21	0	5	0	0	2	3
22	0	5	0	0	4	1
23	1	4	0	0	4	1
24	2	3	0	0	3	2
TOTAL	25	92	3	1	77	42
MEAN	1.04	3.83	.13	.04	3.21	1.75
RANGE	0-2	3-5	0-1	0-1	1-5	0-4

+ : > 1 standard deviation above mean

0 : within  $\pm$  1 standard deviation of mean

- : < 1 standard deviation below mean

APPENDIX C

CONVERTED NORMATIVE MEANS FOR  
SELECTED PART II DOMAINS

ABS PART II MEAN DOMAIN SCORES AGES 13 - 18

	Normative Means	Males N	Converted Means	Normative Means	Females N	Converted Means
A. Violent and Destructive Behavior	6.96	201	3.94	8.68	170	4.82
B. Antisocial Behavior	9.12	215	6.45	9.91	199	6.44
C. Rebellious Behavior	7.82	211 263	4.65	8.46	164	4.53
D. Untrustworthy Behavior	4.21	263	1.92	5.27	115	1.98
			N = 355			N = 306

APPENDIX D

SELECTED PART II DOMAIN COMPARISONS BETWEEN  
HIGH - LOW MALADAPTIVE SUBJECTS  
AND ABS NORMATIVE SAMPLE

HIGH AND LOW MALADAPTIVE  $S_s$  DOMAIN SCORES  
 COMPARED TO ABS DOMAINS A, B, C, AND D  
 CONVERTED MEANS

Subject	High Maladaptive $S_s$		Low Maladaptive $S_s$	
	+	-	+	-
1	3	1	0	4
2	0	4	0	4
3	4	0	0	4
4	4	0	0	4
5	4	0	0	4
6	4	0	0	4
7	1	3	0	4
8	2	2	0	4
9	3	1	0	4
10	4	0	0	4
11	1	3	0	4
12	4	0	0	4
13	2	2	0	4
14	4	0	0	4
15	2	2	0	4
16	0	4	0	4
17	4	0	0	4
18	4	0	0	4
19	3	1	0	4
20	1	3	0	4

HIGH AND LOW MALADAPTIVE S<sub>S</sub> DOMAIN SCORES  
 COMPARED TO ABS DOMAINS A, B, C, AND D  
 CONVERTED MEANS

Subject	High Maladaptive S <sub>S</sub>		Low Maladaptive S <sub>S</sub>	
21	2	2	0	4
22	3	1	0	4
23	1	3	0	4
24	2	2	0	4
	-----	-----	-----	-----
TOTAL	62	34	0	96
MEAN	2.58	1.42	0	4.0
MODE	4	0	0	4.0
RANGE	0-4	0-4	0	4.0

+ : > Converted Mean

- : < Converted Mean

APPENDIX E

EXPERIMENTAL DESIGN

Groups	Pre-Treatment (Base Rate)		Experimental Treatment		Post-Treatment		
	T <sub>1</sub>	(II)	T <sub>2</sub>	(II)	T <sub>3</sub>	(II)	T <sub>4</sub>
A+		o		+		o	
B-		o		-		o	
Co		o		o		o	
D+		o		+		o	
E-		o		-		o	
Fo		o		o		o	
G+		o		+		o	
H-		o		-		o	
Io		o		o		o	
J+		o		+		o	
K-		o		-		o	
Lo		o		o		o	

+ = Direct Positive Reinforcement Condition  
 - = Indirect Negative Reinforcement Condition  
 o = Neutral (No Reinforcement) Condition

A+ B- Co = Ss high on ABS Part I      T = Trials  
 D+ E- Fo = Ss low on ABS Part I  
 G+ H- Io = Ss high on ABS Part II      (II) = 40 second intertrial  
 J+ K- Lo = Ss low on ABS Part II      interval



APPENDIX F

OTHER COMPARISONS

## ADAPTIVE ANALYSIS

## COMPARISONS

<u>A Posteriori</u> (Tukey's)	q	df	r	p
HA - DP to HA - N	7.5996	30	2	.01
HA - DP to HA - IN	4.5767	30	1	.01
HA - IN to HA - N	3.0229	30	1	.05
LA - IN to LA - IN	1.8054	30	1	NS
LA - DP to LA - IN	2.7292	30	1	NS
HA - IN Trial 1 to HA - IN Trial 2	3.7457	14	2	.05

## MALADAPTIVE ANALYSIS

## COMPARISONS

<u>A Posteriori</u> (Turkey's)	q	df	r	p
LM - DP to LM - N	3.5311	30	2	.05
HA - IN Trial 3 to HA - IN Trial 4				

APPENDIX G

RAW DATA

REINFORCEMENT CONDITION	SUBJECT	BASERATE (MEAN OF TRIALS 1 AND 2)	EXPERIMENTAL TRIAL (TRIAL 3)	POST-TREATMENT TRIAL (TRIAL 4)
HIGH ADAPTIVE DIRECT POSITIVE REINFORCEMENT	1.	54	57	62
	2.	43.5	64	64
	3.	51	59	59
	4.	52.5	63	62
	5.	71	72	75
	6.	49	72	69
	7.	32.5	42	44
	8.	66.5	83	85
LOW ADAPTIVE DIRECT POSITIVE REINFORCEMENT	1.	30.5	30	32
	2.	43	45	38
	3.	31	41	36
	4.	52.5	50	62
	5.	48.5	52	53
	6.	20.5	19	13
	7.	69.5	63	63
	8.	44	50	52

REINFORCEMENT CONDITION	SUBJECT	BASERATE (MEAN OF TRIALS 1 AND 2)	EXPERIMENTAL TRIAL (TRIAL 3)	POST-TREATMENT TRIAL (TRIAL 4)
HIGH ADAPTIVE INDIRECT NEGATIVE REINFORCEMENT	1.	52	56	52
	2.	43.5	50	50
	3.	49	61	63
	4.	53	60	52
	5.	25.5	25	28
	6.	76	83	66
	7.	44.5	68	53
	8.	70.5	69	75
LOW ADAPTIVE INDIRECT NEGATIVE REINFORCEMENT	1.	32.5	39	33
	2.	39	34	30
	3.	40.5	57	60
	4.	53.5	54	59
	5.	56	49	59
	6.	43	50	54
	7.	61.5	66	67
	8.	30	41	45

REINFORCEMENT CONDITION	SUBJECT	BASERATE (MEAN OF TRIALS 1 AND 2)	EXPERIMENTAL TRIAL (TRIAL 3)	POST-TREATMENT TRIAL (TRIAL 4)
HIGH ADAPTIVE NEUTRAL - NO REINFORCEMENT	1.	47.5	47	48
	2.	62	64	60
	3.	44.5	47	48
	4.	85	76	88
	5.	69	75	66
	6.	91	83	88
	7.	81.5	91	83
	8.	54.5	55	62
LOW ADAPTIVE NEUTRAL - NO REINFORCEMENT	1.	86	80	86
	2.	30.5	33	33
	3.	55.5	65	53
	4.	50	61	58
	5.	29	31	38
	6.	38.5	43	41
	7.	59.5	59	58
	8.	48	51	46

REINFORCEMENT CONDITION	SUBJECT	BASERATE (MEAN OF TRIALS 1 AND 2)	EXPERIMENTAL TRIAL (TRIAL 3)	POST-TREATMENT TRIAL (TRIAL 4)
HIGH MALADAPTIVE DIRECT POSITIVE REINFORCEMENT	1.	54	57	62
	2.	30.5	30	32
	3.	43	45	38
	4.	31	41	36
	5.	49	72	69
	6.	48.5	52	53
	7.	69.5	63	63
	8.	44	50	52
LOW MALADAPTIVE DIRECT POSITIVE REINFORCEMENT	1.	43.5	64	64
	2.	51	59	59
	3.	52.5	63	62
	4.	52.5	50	62
	5.	71	72	75
	6.	32.5	42	44
	7.	20.5	19	13
	8.	66.5	93	85

REINFORCEMENT CONDITION	SUBJECT	BASERATE (MEAN OF TRIALS 1 AND 2)	EXPERIMENTAL TRIAL (TRIAL 3)	POST-TREATMENT TRIAL (TRIAL 4)
HIGH MALADAPTIVE INDIRECT NEGATIVE REINFORCEMENT	1.	32.5	39	33
	2.	52	56	52
	3.	40.5	57	60
	4.	53.5	54	59
	5.	76	83	66
	6.	56	49	59
	7.	43	50	54
	8.	61.5	66	67
LOW MALADAPTIVE INDIRECT NEGATIVE REINFORCEMENT	1.	39	34	30
	2.	43.5	50	50
	3.	49	61	63
	4.	53	60	52
	5.	25.5	25	28
	6.	44.5	68	53
	7.	70.5	69	75
	8.	30	41	45



REINFORCEMENT CONDITION	SUBJECT	BASERATE (MEAN OF TRIALS 1 AND 2)	EXPERIMENTAL TRIAL (TRIAL 3)	POST-TREATMENT TRIAL (TRIAL 4)
HIGH MALADAPTIVE NEUTRAL - NO REINFORCEMENT	1.	30.5	33	33
	2.	62	64	60
	3.	85	76	88
	4.	50	61	58
	5.	69	75	66
	6.	91	83	88
	7.	38.5	43	41
	8.	54.5	55	62
LOW MALADAPTIVE NEUTRAL - NO REINFORCEMENT	1.	47.5	47	48
	2.	86	80	86
	3.	44.5	47	48
	4.	55.5	65	53
	5.	29	31	38
	6.	81.5	91	83
	7.	59.5	59	58
	8.	48	51	46

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