

INTER-RATER SCORE AGREEMENT BETWEEN UNTRAINED AND TRAINED
PAIRS OF CHILD CARE WORKERS WHO RATED A MENTALLY RETARDED
SAMPLE WITH THE AAMD ADAPTIVE BEHAVIOR SCALE

A Thesis
Presented to
the Department of Psychology
Emporia State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Westley E. Tatman
December 1977

AN ABSTRACT OF THE THESIS OF

Westley E. Tatman for the Master of Science
(name of student) (degree)

in Psychology presented on December 23, 1977
(major) (date)

Title: INTER-RATER SCORE AGREEMENT BETWEEN UNTRAINED AND
TRAINED PAIRS OF CHILD CARE WORKERS WHO RATED A MENTALLY
RETARDED SAMPLE WITH THE AAMD ADAPTIVE BEHAVIOR SCALE

Abstract approved: Cooper B. Holmes

A study was undertaken to test the reported inter-rater reliabilities on Part Two of the American Association on Mental Deficiency Adaptive Behavior Scale. In addition, this study trained raters in order to determine if trained raters would obtain higher reliabilities than untrained raters, since the AAMD claimed that untrained persons could accurately administer the scale. From a state institution, a sample of 16 child care workers from three different residential units rated retardates on their respective units. The total number of retardates from each residential unit totaled 22 individuals. The

results indicated that the trained raters achieved significant relationships less often than did the untrained raters' when their domain scores were compared. In the first unit, the scores of all raters were found to have a significant relationship in five of the 14 domains, while only three of the raters' domain scores in the second unit were found to have significant relationships, and none of the domain scores of the raters in the third unit were found to have a significant relationship on a consistent basis that considered untrained/trained, untrained and trained rater combinations. Although the correlation coefficients of each rater type varied from one unit to another, only two of the domain correlations consistently supported the findings of the reliability study cited by the AAMD on Part Two of the revision of this scale.

Del. A. Cass
Approved for the Major Department

Harold E. Christ
Approved for the Graduate Council

ACKNOWLEDGEMENTS

I would like to thank Dr. Louise Hoover, Dr. Jeannie Frieman and Dr. Ray Foster for their assistance during the course of this study.

Appreciation is also extended to the Child Developmentalists who volunteered to participate in this study. Special mention and appreciation is given to those developmentalists who participated as trained raters in the study.

TABLE OF CONTENTS

	Page
LIST OF TABLES	v
Chapter	
1. INTRODUCTION	1
THEORETICAL FORMULATION	1
THE PROBLEM	3
Statement of the Problem	4
Statement of the Hypothesis	4
Purpose of the Study	4
Significance of the Study	5
DEFINITIONS OF TERMS	5
Adaptive Behavior	6
Reliability	6
Intelligence Quotient (IQ)	6
Mental Retardation	6
Mild Mental Retardation	6
Moderate Mental Retardation	7
Severe Mental Retardation	7
Profound Mental Retardation	7
LIMITATIONS OF THE STUDY	7
2. REVIEW OF RELATED LITERATURE	9
3. METHODS AND PROCEDURES	20
POPULATION AND SAMPLING	21

MATERIALS AND INSTRUMENTATION 24

DESIGN 26

DATA COLLECTION 28

DATA ANALYSIS 29

4. ANALYSIS OF DATA 31

 RESPONSE ANALYSIS 31

 STATISTICAL ANALYSIS 32

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .. 45

 SUMMARY 45

 CONCLUSIONS 48

 RECOMMENDATIONS 52

REFERENCE NOTES 55

REFERENCES 56

APPENDIXES 59

 A. Instructions for completing the
 AAMD Adaptive Behavior Scale 59

 B. Data Summary Sheets 63

 C. Profile Summary Sheets 66

 D. Additional Instruction Sheet 69

LIST OF TABLES

Table		Page
1.	Unit A Rater Score Comparisons	34
2.	Unit B Rater Score Comparisons	37
3.	Unit C Rater Score Comparisons	41

Chapter 1

INTRODUCTION

The American Association on Mental Deficiency (AAMD) reported that its newly revised Adaptive Behavior Scale showed good reliability. It reported high reliabilities between the rating scores of child care workers who independently rated the same subject (AAMD, 1974). This chapter has been devoted to presenting a similarly designed reliability study that compared the rating scores between child care workers who rated the same subject with the AAMD Adaptive Behavior Scale.

THEORETICAL FORMULATION

Within the past decade professionals have become critical of the IQ score as the sole criterion used in the assessment of the individual's intellectual processes. Professionals have been aware, and have long recognized that a person's social adaptation cannot be totally predicted from the intellectual process. Two individuals with identical IQ scores do not necessarily cope with societal expectations the same way. Intelligence scores vary from one person to another, and so does the way in which a person will adapt and adjust to his social world (Nihira, 1969).

Professionals within the field of mental retardation have noted and reported that the use of IQ alone, without assessing the individual's social functioning, was quite damaging. Frequently, the mentally retarded individual is not given recognition for acquired social skills; consequently, this individual is inappropriately placed with other retardates whose social skills are not as well developed (Nihira, 1969).

In 1961 the AAMD specified that a diagnosis of mental retardation must include deficiencies within two dimensions, namely measured intelligence and adaptive behavior (Nihira, 1969). In order to assist clinicians in the assessment of adaptive behavior, the AAMD developed the Adaptive Behavior Scale in 1969, which was revised in 1974. Tests that assert accurate behavior measurement usually refer to completed studies which demonstrate that the test actually measures what it claims, i.e., has good validity. In addition, references are also made to completed studies which demonstrate that the scores obtained by different administrators are relatively similar, i.e., have good reliability. The 1974 revision of the AAMD Adaptive Behavior Scale claimed high reliability between test administrators (AAMD, 1974). This claim was based on a single study, which has not been published. Considering that only one study has been completed on the new revision, and that no study has been published, further research into this scale's reliability is warranted.

THE PROBLEM

The Adaptive Behavior Scale manual implied that the scale can be used by individuals with little or no training, such as institutional aides, parents and teachers (AAMD, 1974). If, in fact, untrained persons used this scale and obtained results of high reliability, the claims of its advocates concerning inter-rater reliability would be supported. However, if the scores were found to be dissimilar, then the claims made concerning scorer reliability could be questioned. Since the reported AAMD reliability study used only one pair of raters for each individual rated, would their claims be substantiated if more than one pair of score comparisons were made? If more than one pair of raters was used would the attained scores between raters, who rated the same individual, be similar or dissimilar? Furthermore, would the scores obtained by trained raters be similar or dissimilar to those obtained by untrained raters?

The reliability study reported in the 1974 edition of the manual was based on a revision where only Part One items were changed. Because Part Two remained unchanged and because the reliability for Part Two was reported to be considerably lower than Part One, this study will be specifically concerned with Part Two of the AAMD Adaptive Behavior Scale.

Statement of the Problem

Is there a significant relationship between the scores obtained by the untrained raters on Part Two of the AAMD Adaptive Behavior Scale?

Is there a significant relationship between the scores obtained by the trained raters on Part Two of the AAMD Adaptive Behavior Scale?

Is there a significant relationship between the scores obtained by the untrained and trained raters on Part Two of the AAMD Adaptive Behavior Scale?

Statement of the Hypotheses (Null Form)

There is no significant relationship between the scores obtained by the untrained raters on Part Two of the AAMD Adaptive Behavior Scale.

There is no significant relationship between the scores obtained by the trained raters on Part Two of the AAMD Adaptive Behavior Scale.

There is no significant relationship between the scores obtained by the untrained and trained raters on Part Two of the AAMD Adaptive Behavior Scale.

Purpose of the Study

The intent of this study was to investigate the inter-rater reliability claims of the AAMD Adaptive Behavior Scale. Specifically, the scores obtained by untrained and trained raters were compared. An additional reason for pursuing this investigation was that the AAMD study used

only one pair of raters from which their reliability data was obtained. However, the present study was designed to correct this deficiency by comparing the scores between three pairs of untrained and trained raters.

Significance of the Study

Since the recognition of the importance of adaptive behavior in determining social functioning, it became necessary to establish an instrument that could accurately measure adaptive behavior criteria. The AAMD Adaptive Behavior Scale has claimed such accuracy. If this study reproduced the evidence indicating good inter-rater reliability, it would help to solidify these claims, and thus support the view that this instrument is a good measuring tool for adaptive behavior. On the other hand, if this study did not reproduce the evidence indicating good inter-rater reliability, the claims made by adherents of this scale may not be supported. In either event, the results of this study can only add more information into the search for an appropriate means of identifying adaptive behavior indices.

DEFINITIONS OF TERMS

The terms to be used in this study consist of definitions of adaptive behavior and reliability. In addition, terms relating to the levels of mental retardation are provided.

Adaptive Behavior

This term is defined as the ability of an individual to adapt to the natural and societal demands within his environment. In addition, it means the degree to which a person can function and maintain himself independently, and the degree to which he satisfies the cultural demands of social and personal responsibility (Nihira, 1969).

Reliability

Reliability in this study was defined operationally. Specifically, reliability was interpreted as the level of inter-rater agreement which was reflected by correlation coefficients derived from either the Pearson product-moment (r) or the Kendall Coefficient of Concordance (W).

Intelligence Quotient (IQ)

The IQ is defined as the score obtained from an individual's performance on either the Stanford-Binet or the Wechsler Intelligence Scales (AAMD, 1973).

Mental Retardation

Mental Retardation is defined as the presence of significantly subaverage intellectual functioning as well as existing deficiencies in adaptive behavior that is demonstrated during the developmental period (AAMD, 1973).

Mild Mental Retardation

The mildly retarded person is defined as one who

scores within the range of 68-52 on the Stanford-Binet Intelligence Scale, or 69-55 on the Wechsler Intelligence Scale (AAMD, 1973).

Moderate Mental Retardation

The moderately retarded person is defined as one who scores within the range of 51-36 on the Stanford-Binet Intelligence Scale, or 54-40 on the Wechsler Intelligence Scale (AAMD, 1973).

Severe Mental Retardation

The severely retarded person is defined as one who scores within the range of 35-20 on the Stanford-Binet Intelligence Scale, or 39-25 on the Wechsler Intelligence Scale (AAMD, 1973).

Profound Mental Retardation

The profoundly retarded person is defined as one who scores within the range of 19 and below on the Stanford-Binet Intelligence Scale, or 24 and below on the Wechsler Intelligence Scale (AAMD, 1973).

LIMITATIONS OF THE STUDY

This study was limited to the determination of inter-rater reliability, that is the comparison of two sets of scores in order to ascertain their level of agreement with each other. No attempt was made to generalize to any dimension other than inter-scorer reliability. The

subjects in this study were limited to child care workers from the Kansas Neurological Institute, Topeka, Kansas. The limitation of three pairs of raters was imposed because the institution's residential living units, in most cases, contained only three "morning" shift workers and three "afternoon" shift workers. The retardates were selected so that each unit taking part in this study had retardates in each IQ classification, i.e., each living unit was composed of mild, moderate, severe and profound mentally retarded persons. Due to the unequal sex and age distribution in the selected retardates it was not possible to control for these variables. A final limitation was that only comparisons with Part Two of the AAMD Adaptive Behavior Scale were performed. This limitation was imposed because according to the information presented in the 1974 manual of the AAMD Adaptive Behavior Scale, the reliability coefficients for Part One were reported to be considerably higher than those on Part Two of the scale, and because only Part One of the scale was revised.

Chapter 2

REVIEW OF RELATED LITERATURE

The AAMD Adaptive Behavior Scale was published in 1969, but in 1974 it was revised. The scale was designed as a behavior rating scale for mentally retarded, emotionally maladjusted, and developmentally disabled persons. Generally, the term "adaptive behavior" refers to an individual's effectiveness in coping with the natural and social demands of the environment. The IQ score was not able to measure the dimensions of adaptive behavior; therefore, the AAMD designed an instrument capable of measuring an individual's level of adaptive behavior (Nihira, 1969). The development of this scale began in 1965 when the AAMD sponsored a project established at the Parsons State Hospital and Training Center. The aim of this project was to develop an understanding of adaptive behavior as it related to mental retardation and emotional disturbance, and to develop a system of measuring adaptive behavior from infancy through adulthood. Furthermore, this project would facilitate an improved understanding of adaptive behavior, and would lead directly to improved methods of evaluation and treatment of mentally retarded persons in terms of present needs and in terms of long-range goal planning (Leland et al., 1967).

Nihira and Shellhaas (1970) summarized the findings

of the Adaptive Behavior Project which directly led to the formulation of the Adaptive Behavior Scale. They reported that Scott's (1966) adaptive strategies: accommodation, locomotion and construction were accepted as the concepts underlying adaptive behavior. Accommodation is the acquisition of patterns and traits that satisfy existing environmental requirements. Locomotion involves movement in the search for an environment congenial to the individual's present behavior patterns and traits. Construction is changing the environmental requirements so that the environment becomes more congenial to the individual's resources. Three types of rehabilitation programs were conceptualized from these three adaptive strategies. The first and most frequently occurring, accommodation, is the ability to modify or develop patterns of behaviors or traits that will enable the retarded person to cope with existing environmental demands. In locomotion the retarded person must find an environment that will accept his limitations, and, of course, he needs to be placed in that environment. Finally, construction requires that the environment be changed to the extent that it becomes more accepting of the retarded person's existing patterns of behaviors and traits. In order to utilize these three approaches information must be obtained concerning the individual's present behavior patterns and traits, and the demands and requirements of the environment. The development of the Adaptive Behavior Scale was an attempt to find this kind of information.

In 1961, when the AAMD declared that an individual had to have deficiencies in both measured intelligence and adaptive behavior before that person could be diagnosed mentally retarded, it became necessary to develop a special program of research (Leland et al., Note 1). Researchers realized that in order to develop norms of adaptive behavior, they had to make comparisons between individuals. According to Nihira, Foster and Spencer (1968) such a comparison would require an analytical process. They indicated that a means was needed to find the "common denominator" of such complex behavioral phenomena, dimensions of adaptive behavior. Multivariate analysis was presented as the means to describe such phenomena by identifying a set of dimensions that would provide a quantitative description of the nature and variation of human behavior by the use of systematically obtained observations of consistencies and patterns of behavior. The application of a multivariate research approach to the study of adaptive behavior required the discovery of factors that can be replicated in two or three different samples, to form hypotheses concerning the nature of these factors, and to continue experimentation with other pertinent factors relating to the adaptive behavior dimension. The major areas accepted by other rating scales were examined in order to obtain adequate samples. This examination included the behavior rating scales presently part of the public domain in both the United States and Great Britain. In addition, a list

of significant behaviors was obtained from institutional ward personnel via semistructured interviews of ward personnel. These behaviors were behaviors that required day-to-day care and supervision. A preliminary behavior checklist yielded 325 specific behaviors representing 10 behavioral domains. These domains were: Independent Functioning, Physical Development, Economic Activity, Number and Time Concept, Occupation (Domestic), Language Development, Self-Direction, Occupation (General), Socialization and Social Responsibility. From the list of 325 items, 211 items in the checklist were found to have a significant correlation with adaptive behavior, independent of measured intelligence, on at least one adaptive behavior level. These 10 behavioral domains were again found to be salient features of adaptive behavior when Nihira (Note 2) administered the Adaptive Behavior Scale to 458 adolescents in a residential setting for the retarded.

Nihira (1969) reported that a factor analysis of the 325 items contained in the preliminary Adaptive Behavior Checklist produced six factors which accounted for 94.4 percent of the total variance in the correlation matrix. The sample studied was 919 adult, ambulatory, institutionalized retardates. The six factors isolated were: Personal Independence, Social Maladaptation, Institutional Difference, Intra-Maladaptation, Sex Difference and Age Difference. Personal Independence consisted of those behavior items representing profound social or

psychological withdrawal and a vegetative behavior pattern. The Social Maladaptation factor included destructive, rebellious, untrustworthy and anti-social behaviors, and personality difficulties suggestive of various negative attitudes toward the social environment. Institutional Difference was interpreted merely as the factor of institutional difference. There were significant differences between the two institutions used in respect to the variables of Occupation (Domestic), Number and Time Concepts and Language Development. The items pertaining to the Intra-Maladaptation suggested the presence of a self-depreciating and intropunitive process in the adaptive behavior sphere. Sex Difference was merely defined as the factor of sex difference. Female subjects were rated lower than were male subjects on the domains of Independent Functioning and Physical Development. The factor of Age Difference was found to be related to the variable of Sexually Aberrant Behavior. This variable was found to be inversely related to age, for example these behaviors had been observed more frequently among younger residents than among older residents. Out of the six obtained factors, Personal Independence, Social Maladaptation and Intra-Maladaptation were felt to have importance upon the quest for general dimensions of adaptive behavior. The three remaining factors, Institutional Difference, Sex Difference and Age Difference were described as control variables.

In another study by Nihira (1969) factors similar

to those of his adult study were found. The results of studying 313 institutionalized children revealed three major dimensions or factors related to the adaptive behavior process; they were Personal Independence, Social Maladaptation and Personal Maladaptation. The Personal Maladaptation factor found in this study was paralleled, and considered quite similar to the factor Intra-Maladaptation reported in the adult study. These factors were also found to be quite stable across age ranges that spanned from preadolescence through adulthood.

Tomiyasu et al. (1974) administered the AAMD Adaptive Behavior Scale (revised) (Japanese translation) to 1,917 retarded children and 6,092 retarded adults, and found that the significant factors in Part One of the scale were: Personal Independence, Social Adjustment and Personal and Social Responsibility. The three significant factors found on Part Two of the scale for both children and adults were: Anti-Social and Aggressive Behavior, Self-Stimulating Behavior and Deficient Interpersonal Behavior.

In another recent study Guarnaccia (1976) had the Adaptive Behavior Scale administered to 40 retarded adults by their counselors at a vocational training center. A factor analysis revealed the presence of the following factors: Personal Independence, Personal Responsibility, Productivity and Social Responsibility. While controlling for sex, verbal IQ, performance IQ and maternal trust, they found that the predictors together accounted for 75 percent

of the variance in the factor of Personal Independence, but very little of the variance in the other three factors.

Validity studies completed on the AAMD Adaptive Behavior Scale consisted of factorial validity-factor analysis studies of the domain scores and practical validity. Factor analysis studies of the domain scores isolated three major dimensions: Personal Independence, Social Maladaptation and Personal Maladaptation (Nihira, 1969, 1969). The Social Maladaptation and Personal Maladaptation were found to be independent of one another. In fact, the delineation of these two factors suggested that a retarded person with behavior disorders usually exhibits one of these two categories of response patterns. The Personal Independence and Social Maladaptation factors accounted for approximately 70 percent of the total variance of the group studied.

Leland et al. (Note 1) studied 41 institutionalized retarded persons between the ages of 10 and 13, and found that the scores on Part One domains of the scale discriminated significantly between those who had been previously classified at different levels of adaptive behavior according to clinical judgement.

In a study of 531 retarded institutionalized adults, Greenwood and Perry (Note 3) showed that all of the Part One scores and some of the Part Two domain scores significantly discriminated among those persons who had been placed into five homogenous administrative units, that

is, medical, educational, vocational, preplacement and release units in a residential treatment unit for mentally retarded persons.

Foster and Foster (Note 4) reported a study based on 41 retarded children and adolescents. The results indicated that three domain scores from Part One, and Part Two total scores showed a significant change from pre-test over a two year period when intense operant treatment regimes were used.

Another study investigated a group of 260 retarded subjects who were divided into groups considered psychiatrically and non-psychiatrically impaired. Six of the domains in Part Two of the Adaptive Behavior Scale were found to be significantly discriminating between impairment groups, although the groups had the same IQ and general level of functioning (Foster and Nihira, 1969). These six domains were: Untrustworthiness, Psychological Disturbances, Self-Abusiveness, Rebelliousness, Antisocial Behavior, and Violence and Destructiveness.

Christian and Malone (1973) studied the relationship between WISC and Stanford-Binet IQ scores, Wide Range Achievement Test scores, and Adaptive Behavior Scale scores of 129 children and adolescents in a special education program. Significant correlations were obtained between Wide Range Achievement Tests and IQ scores, and between Adaptive Behavior Scale scores and IQ.

Another study found significant relationships

between the class placement level of EMR (Educable Mentally Retarded) pupils and their respective domain scores on the AAMD Adaptive Behavior Scale. This tended to be even more significant since a population sample of 2600 children was used (Lambert et al., 1975).

Inter-rater reliabilities are reported in the manual of the AAMD Adaptive Behavior Scale (AAMD, 1974). This new revision was administered to 133 persons from three different settings. Each individual was independently rated by two ward personnel, who were from the "day" and "evening" shifts respectively. The mean rater reliability found on Part One of the scale was .86; the mean reliability found on Part Two of the scale was .57. These mean scores were based on the reliability coefficients of each individual domain score. In addition, these reliability results were based on inter-rater agreement, which is considered to be one of the important factors to be weighed when interpreting behavior ratings (Leland et al., Note 5).

Inter-rater reliabilities were obtained in conjunction with the factor analytic studies on which the scale is based. In the adult study 48 subjects were rated independently by two different judges with the resultant reliabilities ranging from .89 to .35 on the domain scores; the median reliability was .72. Between continuous variables, the Pearson product-moment and Phi coefficients were used, and between dichotomous variables, the Biserial correlation coefficients were used (Nihira, 1969). Another

factorial study on children and adolescents reported inter-rater reliabilities performed on 48 subjects who were rated by two independent judges. The range of the reliability coefficients was from .89 to .35 on the domain scores, while the reported median was .72. The statistical tests used in obtaining the reliability coefficients were the same as reported in the previous study (Nihira, 1969). There has been some disagreement in regards to whether or not only trained raters should be used to establish the criteria in that trained raters would maximize objectivity so that more reliable results would be obtained (Leland, et al., Note 1).

Congdon (1973) described modifications in the Adaptive Behavior Scale that produced scales limited to defining profound mental retardation and maladaptive behavior. This was achieved by dropping many of the high competency items found in Part One of the scale.

The Adaptive Behavior Scale has also been cited to be suited for further research in language acquisition (Perozzi, 1972). Language acquisition theories were found to be related to three aspects of adaptive behavior, namely maturation, learning and social adjustment.

Regarding mentally retarded educational programming, Bogen and Aanes (1975) found that the Adaptive Behavior Scale proved useful in the development of behavioral norms for mentally retarded population grouping. The norms were then utilized objectively in determining individual

and group program needs.

Before the 1974 revision of the Adaptive Behavior Scale it contained faults in both its content and scoring procedures according to Bhattacharya (1973). In his short report, the author pointed out that although the scale was based on the results of factor analysis, some domains overlapped and some occupied two extreme points on a behavior scale. He indicated that the scale could be improved if changes were made. First, the number of points could be made uniform and more significant by making the distance between two points approximately equal. Second, in order to make the scale more comprehensive, new dimensions should be added. Third, since the negative personality traits are unsystematically placed in the scale, reorganization of the personality items was needed. Finally, his fourth point was that a scale profile containing information about the relative standing of each retardate on each variable was needed to make the scale more comprehensive.

Chapter 3

METHODS AND PROCEDURES

Since only one study on inter-rater reliability was completed on the 1974 revision of the AAMD Adaptive Behavior Scale, the need for further research into inter-rater reliability with this instrument was apparent. The intent of this study was to investigate the claims of the AAMD on its revised Adaptive Behavior Scale, namely that this scale can be used accurately by untrained raters as well as by trained raters. Its claims, while based on a large sample of retardates in three different institutional settings utilized only one pair of raters from each institution.

Although this present study used retardates and raters from only one institutional setting, it had more than one pair of raters complete the Adaptive Behavior Scale. In addition, it was decided that this study would differ from the AAMD study by having both trained and untrained raters instead of just using untrained raters. Since the AAMD manual reported that the reliability coefficients on Part Two of the Adaptive Behavior Scale were considerably lower than those on Part One, only Part Two scores were compared in this present study. In spite of utilizing only Part Two scores, the raters in this present

study completed both Part One and Part Two of the AAMD Adaptive Behavior Scale. Information regarding the population sample of retardates and raters chosen are explained in this chapter. In addition, the design of the study, collection of data and data analysis applied are also detailed.

POPULATION AND SAMPLING

It was decided to select three different residential units from the institutionalized retardates of the Kansas Neurological Institute, Topeka, Kansas to be rated with the AAMD Adaptive Behavior Scale by child care workers who work with these retardates on their living units. The child care workers selected were those individuals who work the "morning" shift (6:00 a.m. - 2:00 p.m.) and those individuals who work the "afternoon" shift (2:00 p.m. - 10:00 p.m.). While one of the units chosen had three workers on each shift, the other two units had only two workers on each shift. In order to have three pairs of raters from each unit, the child care worker supervisor from the "morning" and "afternoon" shifts from these two units were selected to participate as raters in the two units that had only two pairs of raters. Since these two units were in the same administrative section, both units had the same "morning" and "afternoon" supervisor. Therefore, these two supervisors participated as raters in two of the units selected. Consequently, although these two units had three

pairs of raters, the number of raters from these two units totaled only 10 individuals. Added to the six raters in the remaining unit, the total of all raters from all three units was 16 individuals. Therefore, each of the three units chosen had three pairs of raters.

In order to have trained raters as well as untrained raters, one pair of raters from each unit was selected to be trained; consequently, they received special instruction in the use of the AAMD Adaptive Behavior Scale which qualified them to participate as trained raters. Therefore, each unit consisted of one pair of trained raters and two pairs of untrained raters. Since the two child care worker supervisors served as raters in two of the units, they were selected to participate, after training, as trained raters in two of the units. The trainees from the remaining unit were selected on the basis of their expressed interest in this study because training required additional effort and time.

Although it was intended to have at least two retardates in each retarded IQ classification from all three units, only one unit met the criterion of having two mild, moderate, severe and profound mentally retarded residents. The second living unit had two retardates in each classification with the exception of having only one mildly retarded resident. The third living unit had retardates in each classification with the exception of having only one profoundly retarded resident. Therefore, one unit was

composed of eight retarded subjects, and the other two units were composed of seven retarded subjects each. The retarded subjects from all three living units totaled 22 individuals.

The population sample of retardates was not randomly sampled in that only three living units were found to have retardates in all four IQ classifications. The Stanford-Binet or Wechsler IQ scores for each retardate was obtained from institutional records. However, four of the IQ classifications were based on tests other than the Stanford-Binet and Wechsler IQ scales. Two IQ's were based on the Merrill Palmer Scale of Mental Tests, one IQ was based on the Cattell Infant Intelligence Scale, and another was based on the Interim Hayes-Binet.

The age range and sex of the retardates in the unit composed of eight subjects were ages 14 through 21, with four males and four females. The age range and sex of the retardates in the unit composed of seven subjects with only one profoundly retarded subject were ages 17 through 22, with six females and one male. The age range and sex of the retardates in the unit composed of seven subjects with only one mildly retarded subject were ages eight through 16, with seven males.

In order to facilitate description, the living unit with four females and four males was labeled unit A. The living unit with six females and one male was labeled unit B. The remaining unit with seven males was labeled unit C.

MATERIALS AND INSTRUMENTATION

The only materials and instruments used in this study were the AAMD Adaptive Behavior Scale, 1974 Revision. Specific instructions for completing the scale are presented in the scale booklet. These instructions are reproduced in Appendix A. Although the instructions are contained in the scale booklet, the administrator should be made aware of three important considerations. First, where certain items are not applicable to the individual being rated (for example, the item referring to money changing ability may be inappropriate where the individual has no opportunity to handle money) the rater can ignore the item. Second, where items deal with situations that are against regulations, such as using the telephone, the administrator must complete the rating, and indicate if the person could perform the task if it were allowed. This is done to insure that no one will be penalized for conditions beyond their control. Third, where items describe maladaptive behaviors not usually seen in very young children, such items as those referring to aggressive behavior may not be appropriate; however, the rater should try to record the behavior as accurately as possible (AAMD, 1974).

The first part of the Adaptive Behavior Scale was designed for the measurement of an individual's skills and abilities in the following domains of behavior: independent functioning, physical development, economic activities,

language development, number and time concept, occupation (domestic), occupation (general), self-direction, responsibility and socialization. The second part of the scale was designed for the measurement of the following domains: violent and destructive behavior, antisocial behavior, rebellious behavior, untrustworthy behavior, withdrawal, stereotyped behavior and odd mannerisms, inappropriate interpersonal manners, unacceptable vocal habits, peculiar or eccentric habits, sexually aberrant behavior, self-abusive behavior, hyperactive tendencies, and psychological disturbances (Nihira and Shellhaas, 1970).

In Part One of the scale, scores are summed for each item statement, and the addition of these scores yields either a subdomain score or directly yields the domain score. The subdomain items are those statements that are included in the sphere of a particular domain, for example Domain II, Physical Development contains items dealing with two aspects of this domain, namely A) Sensory Development and B) Motor Development. Six of the domains in this part of the scale contain subdomains, while the remaining four domains do not have subdomains, and hence are directly scored from the sum of the item scores. Likewise, in Part Two of the scale domain scores are the direct result of summing the item scores, since this part of the scale does not have any subdomain categories. To reiterate, when the item scores are summed, the rater obtains the subdomain score depending on the presence or absence of

subdomains for that particular domain. The sum of the subdomain scores produces the domain score. When the subdomain and domain scores are computed, they are placed onto the Data Summary Sheet located in the back of the scale booklet (AAMD, 1974). A sample Data Summary Sheet for both Part One and Part Two scores was reproduced, and can be found in Appendix B.

Although test profiling was not performed as part of this study, this test does provide a method for obtaining individual age related profiling. The test profile is achieved by entering the raw scores into the designated space at the bottom of the Profile Summary Sheet. Two such sheets are provided in the back of each scale booklet; one sheet pertains to Part One domain scores, and the other pertains to Part Two domain scores. The domain raw scores are then converted into percentile ranks by using one of the 22 age related tables. The age range of these tables is from three through 69. The obtained domain percentile score is then placed onto the Profile Summary Sheet. After this is done with each domain score, the adaptive behavior profile is obtained (AAMD, 1974). Reproductions of the Profile Summary Sheets for both Part One and Part Two of the scale are included in Appendix C.

DESIGN

After each of the three living units were selected, each of the 16 child care workers was interviewed by the

researcher in order to establish an amicable relationship that would enhance their interest and cooperation in their participation in this study. Following these interviews, and after the selection of those raters who were to participate in the study as trained raters, the researcher initiated the training procedure. The training sessions began with a session devoted to didactic preparation. This included a discussion concerning the administration instructions contained in the AAMD Adaptive Behavior Scale manual as well as the instructions contained in the scale booklet itself. In addition, scoring procedures such as mathematical computation and counting were also discussed. After this session, the two pairs of trainees were asked to complete three ratings on retardates with whom they were familiar, and who were not subjects in the main study. The second and final session was devoted to pointing out the raters item score dissimilarities. In addition, their misconceptions concerning administration technique were discussed and clarified. Finally, an attempt was made to resolve their differing views of the retardate on the particular item being questioned.

After the training session was completed, both the trained and untrained raters on each of the three living units chosen were asked to independently rate the assigned retardates from their respective living units with the AAMD Adaptive Behavior Scale, 1974 Revision. Due to the length of time required to complete each rating (45 to 60 minutes)

they were not required to complete more than one rating per day. This was done to insure that rater fatigue would not influence the test results. It was reported in the previous section that there were three considerations each administrator should be made aware of. These considerations were reproduced on an additional instruction sheet, and each rater received a copy prior to performing his first rating. This additional instruction sheet was reproduced, and can be found in Appendix D.

DATA COLLECTION

Prior to each rating the child care worker was requested to follow the instructions contained in the scale booklet. The raters were not asked to complete scale profiles from the raw scores they obtained. They were instructed that if they were unsure of how to score an item they should re-read the instructions in the scale booklet, or consult the additional instruction sheet provided. In order to insure that each rater independently rated each child from his respective unit, each rater was given the scale booklet just prior to the time he was scheduled to go off duty for the day, and at that time he was informed of the retarded person's name whom he was to rate. After the child care worker completed each rating, he was instructed to deliver the booklet to the section secretary where it was collected either at 8:00 a.m. or 3:00 p.m. daily until all ratings on the chosen

retardates were collected. After the completed scales were retrieved from the section secretary, each rating was checked for accuracy in addition and subtraction by this researcher before the scores were placed on the Data Summary Sheets as being true raw scores.

DATA ANALYSIS

The data in this study were analyzed for the purpose of determining the degree of reliability between raters who rated the same person, or the inter-rater level of agreement. The data were grouped according to untrained/trained, untrained and trained rater pairs.

Comparisons of the obtained domain scores between each pair of trained raters from each living unit were computed with the Pearson product-moment (r) and the correlation coefficients were obtained with the formula:

$$r_{x,y} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Comparisons of the obtained domain scores between each pair of untrained and each pair of untrained/trained raters were computed with the Kendall Coefficient of Concordance (W), and correlation coefficients were obtained with the formula:

$$W = \frac{s}{1/12 k^2 (N^3 - N)}$$

Both of these formulas were used because there was more than one variable, the variables were score data, and because there was one score for each rater.

All computations were performed on a Rockwell hand computer, Model 31R.

The .05 level was selected as a significant relationship. The significance levels for \underline{r} and \underline{W} were obtained from significance tables for \underline{r} (degrees of freedom = $\underline{N} - 2$), and from significance tables for \underline{W} . However, since the table for \underline{W} was limited to \underline{N} 's of seven, the significance level for unit A, which had an \underline{N} of eight, was obtained from the chi square table (degrees of freedom = $\underline{N} - 1$) after the data were converted with the following formula:

$$\chi^2 = k(N - 1)W$$

Tables were developed that showed domain correlations and levels of significance obtained by the raters according to the respective units where they completed their ratings.

Chapter 4

ANALYSIS OF DATA

The data resulting from the scores obtained by the child care workers who completed the AAMD Adaptive Behavior Scale, Part Two were compared to ascertain the level of inter-rater agreement. The problem was to determine if a significant relationship existed between untrained raters, trained raters and between untrained/trained raters.

RESPONSE ANALYSIS

In Chapter Three it was indicated that three separate units of retardates would be rated with the AAMD Adaptive Behavior Scale by three pairs of child care workers from each respective living unit. Although both Part One and Part Two of the scale were completed, only those scores from Part Two were analyzed in this study. As indicated in Chapter Three, the child care workers were asked to rate each retardate from their respective unit with the Adaptive Behavior Scale within the time they went off duty and reported for work on the following day. However, there were varying degrees of cooperation in meeting these requested time limits. The raters from units A and B were most cooperative regarding the time limitations with the exception of the trained raters from these two units. In

comparison, unit C raters were usually tardy in returning their booklets at the specified times. In addition, the raters from unit C failed to comply with the request to leave their completed booklets with the section secretary, while the raters from units A and B generally complied with this request. Furthermore, more adding errors were made by the raters from unit C than either units A or B. Therefore, as a group, the raters from unit C tended to be less cooperative and more careless than the raters from the other two units.

STATISTICAL ANALYSIS

The Kendall Coefficient of Concordance, \underline{W} , was the statistical method used to compute the level of inter-rater agreement between the untrained raters, and between the untrained/trained raters. Due to the inapplicability of using the Kendall Coefficient between the trained raters, the Pearson product-moment was used.

In order to test the null hypotheses that there were no significant relationships between the untrained/trained, untrained and trained raters, the significance level for \underline{W} and \underline{r} was obtained from tabled sources. The hypotheses were tested for each of the 14 domain scores from Part Two of the AAMD Adaptive Behavior Scale. In order to show the strength of relationships, the .05 level was chosen as being significant. Statistical analyses were computed for all three units. The Kendall Coefficient of Concordance, \underline{W} , and the

Pearson product-moment, r , coefficients as well as the respective significance levels for unit A appear in Table 1, page 34.

In unit A the relationships between the untrained/trained raters did not achieve significance at the .05 level in the following domains: VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; XI, Hyperactive Tendencies; and XII, Sexually Aberrant Behavior. Therefore, the null hypothesis that there are no significant relationships between the untrained/trained raters was accepted for these domains. The remaining domains showed significance to at least the .05 level. These domains were: I, Violent and Destructive Behavior; II, Antisocial Behavior; III, Rebellious Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; X, Self-Abusive Behavior; XIII, Psychological Disturbances; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between the untrained/trained raters was rejected for these domains. The relationships between the untrained raters from this unit that failed to achieve significance at the .05 level were: VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; X, Self-Abusive Behavior; XI, Hyperactive Tendencies; and XII, Sexually Aberrant Behavior. Therefore, the null hypothesis that there are no significant

Table 1

Unit A Rater Score Comparisons

Domain	Untrained/Trained \underline{W}^a (x^2)	Untrained \underline{W}^a (x^2)	Trained \underline{r}^b
I.	.574 (24.11)**	.738 (20.66)**	.828*
II.	.868 (36.41)**	.861 (24.11)**	.968**
III.	.810 (42.81)**	.891 (24.95)**	.805*
IV.	.663 (27.85)**	.664 (18.95)**	.830*
V.	.609 (25.58)**	.528 (14.78)*	.944**
VI.	.462 (19.36)**	.638 (17.86)*	.224
VII.	.243 (10.16)	.225 (6.30)	.775*
VIII.	.314 (13.15)	.342 (9.58)	.271
IX.	.318 (13.36)	.301 (8.43)	.733*
X.	.430 (18.06)*	.468 (13.10)	.488
XI.	.214 (8.99)	.296 (8.23)	.048
XII.	.322 (13.48)	.419 (11.70)	-.362
XIII.	.473 (19.82)**	.628 (17.58)*	.333
XIV.	.380 (15.92)*	.512 (14.34)*	-.045

Note. Since the \underline{n} for unit A was eight, chi square (x^2) conversions for \underline{W} was indicated.

\underline{W}^a = chi square 14.07, $\underline{p} < .05$
 chi square 18.48, $\underline{p} < .01$

\underline{r}^b = .707, $\underline{p} < .05$
 .834, $\underline{p} < .01$

* $\underline{p} < .05$

** $\underline{p} < .01$

relationships between the untrained raters was accepted for these domains. The remaining domains showed significant relationships to at least the .05 level. These domains were: I, Violent and Destructive Behavior; II, Antisocial Behavior; III, Rebellious Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; XIII, Psychological Disturbances; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between the untrained raters was rejected for these domains. The relationships between the trained raters from this unit that failed to achieve significance at the .05 level were: VI, Stereotyped Behavior and Odd Mannerisms; VIII, Unacceptable Vocal Habits; X, Self-Abusive Behavior; XI, Hyperactive Tendencies; XII, Sexually Aberrant Behavior; XIII, Psychological Disturbances; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between trained raters was accepted for these domains. The remaining domains showed significant relationships to at least the .05 level. These domains were: I, Violent and Destructive Behavior; II, Antisocial Behavior; III, Rebellious Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VII, Inappropriate Interpersonal Manners; and IX, Unacceptable or Eccentric Habits. Therefore, the null hypothesis that there are no significant relationships between the trained raters was rejected for these domains. Those domains that achieved significance in

all three rater types in unit A were: I, Violent and Destructive Behavior; II, Antisocial Behavior; III, Rebellious Behavior; IV, Untrustworthy Behavior; and V, Withdrawal. The domains that achieved significance between the trained raters, but not between untrained/trained raters were: VII, Inappropriate Interpersonal Manners; and IX, Unacceptable or Eccentric Habits. The domains that achieved significance between both the untrained raters and untrained/trained raters, but not between the trained raters were: VI, Stereotyped Behavior and Odd Mannerisms; XIII, Psychological Disturbances; and XIV, Use of Medications. The only domain that achieved significance in the untrained/trained raters, but not in either the untrained or trained raters was domain X, Self-Abusive Behavior.

The relationships between the raters domain scores for unit B is presented in Table 2, page 37. For this group the domain score relationships between the untrained/trained raters that failed to achieve significance at the .05 level were: VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; X, Self-Abusive Behavior; XI, Hyperactive Tendencies; and XII, Sexually Aberrant Behavior. Therefore, the null hypothesis that there are no significant relationships between the untrained/trained raters was accepted for these domains. The remaining domains showed significant relationships to at least the .05 level. These domains were: I, Violent and Destructive Behavior; II, Antisocial

Table 2
Unit B Rater Score Comparisons

Domain	Untrained/Trained \underline{w}^a	Untrained \underline{w}^b	Trained \underline{r}^c
I.	.649*	.665**	.750
II.	.864**	.883**	.820*
III.	.548**	.571*	.935**
IV.	.700**	.784**	.688
V.	.533**	.524*	.186
VI.	.410*	.516*	.342
VII.	.149	.169	.000
VIII.	.329	.271	.558
IX.	.212	.215	.415
X.	.315	.263	.966**
XI.	.191	.203	.766*
XII.	.238	.343	.167
XIII.	.581**	.546*	.911**
XIV.	.434**	.492*	.471

Note. The \underline{n} for unit B was seven retarded subjects.

$$\begin{array}{l} \underline{w}^a = .333, p < .05 \\ \quad .419, p < .01 \end{array}$$

$$\begin{array}{l} \underline{w}^b = .484, p < .05 \\ \quad .591, p < .01 \end{array}$$

$$\begin{array}{l} \underline{r}^c = .754, p < .05 \\ \quad .874, p < .01 \end{array}$$

* $p < .05$

** $p < .01$

Behavior; III, Rebellious Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; XIII, Psychological Disturbances; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between the untrained/trained raters was rejected for these domains. The domain score relationships between the untrained raters that failed to achieve significance at the .05 level were: VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; X, Self-Abusive Behavior; XI, Hyperactive Tendencies; and XII, Sexually Aberrant Behavior. Therefore, the null hypothesis that there are no significant relationships between the untrained raters was accepted for these domains. The remaining domains showed significant relationships to at least the .05 level. These domains were: I, Violent and Destructive Behavior; II, Antisocial Behavior, III, Rebellious Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; XIII, Psychological Disturbances; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between the untrained raters was rejected for these domains. The domain score relationships between the trained raters that failed to achieve significance at the .05 level were: I, Violent and Destructive Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; VII, Inappropriate Interpersonal

Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; XII, Sexually Aberrant Behavior; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between the trained raters was accepted for these domains. The remaining domains showed significant relationships to at least the .05 level. These domains were: II, Antisocial Behavior; III, Rebellious Behavior; X, Self-Abusive Behavior; XI, Hyperactive Tendencies; and XIII, Psychological Disturbances. Therefore, the null hypothesis that there are no significant relationships between the trained raters was rejected for these domains. Those domains that achieved significance in all three rater combinations in unit B were: II, Antisocial Behavior; III, Rebellious Behavior; and XIII, Psychological Disturbances. The domains that achieved significance between the trained raters, but not between the untrained/trained raters were : X, Self-Abusive Behavior; and XI, Hyperactive Tendencies. Those domains that achieved significance between the untrained and untrained/trained raters, but not between the trained raters were: I, Violent and Destructive Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; and XIV, Use of Medications. Those domains that were significant between the trained raters, but not between either the untrained or untrained/trained raters were: X, Self-Abusive Behavior; and XI, Hyperactive Tendencies.

The relationships between the raters domain scores for unit C is presented in Table 3, page 41. For this unit the domain score relationships between the untrained/trained raters that failed to achieve significance at the .05 level were: III, Rebellious Behavior; X, Self-Abusive Behavior; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between the untrained/trained raters was accepted for these domains. The remaining domains showed significant relationships to at least the .05 level. These domains were: I, Violent and Destructive Behavior; II, Antisocial Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; XI, Hyperactive Tendencies; XII, Sexually Aberrant Behavior; and XIII, Psychological Disturbances. Therefore, the null hypothesis that there are no significant relationships between the untrained/trained raters was rejected for these domains. The domain score relationships between the untrained raters that failed to achieve significance to the .05 level were: III, Rebellious Behavior; IV, Untrustworthy Behavior; VI, Stereotyped Behavior and Odd Mannerisms; VII, Inappropriate Interpersonal Manners; IX, Unacceptable or Eccentric Habits; X, Self-Abusive Behavior; XII, Sexually Aberrant Behavior; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between

Table 3
Unit C rater Score Comparisons

Domain	Untrained/Trained \underline{w}^a	Untrained \underline{w}^b	Trained \underline{r}^c
I.	.699**	.785**	.848*
II.	.591**	.629**	.665
III.	.286	.436	.223
IV.	.452**	.463	.728
V.	.503**	.609**	-.225
VI.	.370*	.435	.645
VII.	.413*	.425	.493
VIII.	.396*	.485*	-.111
IX.	.527**	.427	.671
X.	.230	.285	.311
XI.	.450**	.593**	.565
XII.	.466**	.378	.743
XIII.	.500**	.552*	.516
XIV.	.304	.201	.679

Note. The n for unit C was seven retarded subjects.

$$\underline{a}_w = .333, p < .05$$

$$.419, p < .01$$

$$\underline{b}_w = .484, p < .05$$

$$.591, p < .01$$

$$\underline{c}_r = .754, p < .05$$

$$.419, p < .01$$

* $p < .05$

** $p < .01$

the untrained raters was accepted for these domains. The remaining domains showed significant relationships to at least the .05 level. These domains were: I, Violent and Destructive Behavior; II, Antisocial Behavior; V, Withdrawal; VIII, Unacceptable Vocal Habits; XI, Hyperactive Tendencies; and XIII, Psychological Disturbances. Therefore, the null hypothesis that there are no significant relationships between the untrained raters was rejected for these domains. The domain score relationships between the trained raters that failed to achieve significance at the .05 level were: II, Antisocial Behavior; III, Rebellious Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; X, Self-Abusive Behavior; XI, Hyperactive Tendencies; XII, Sexually Aberrant Behavior; XIII, Psychological Disturbances; and XIV, Use of Medications. Therefore, the null hypothesis that there are no significant relationships between the trained raters was accepted for these domains. Domain I, Violent and Destructive Behavior, was the only domain that achieved significance at the .05 level. Therefore, the null hypothesis that there are no significant relationships between the trained raters was rejected for this domain. The domains that achieved significance between the untrained/trained raters, but not between the untrained or trained raters were: IV, Untrustworthy Behavior; VI, Stereotyped Behavior

and Odd Mannerisms; VII, Inappropriate Interpersonal Manners; IX, Unacceptable or Eccentric Habits; and XII, Sexually Aberrant Behavior. There were no domains between either the trained or untrained raters that were independently significant.

When considering all three units, the trained raters achieved significance less times than the untrained raters. However, when considering the combined untrained/trained raters, they achieved significance more frequently than did either the trained or untrained raters individually. Another relevant aspect when considering all three units together was that the trained raters had more correlation coefficients above + .50, which was interpreted as a fairly high level of inter-rater agreement, more often than did the untrained or the untrained/trained raters.

The domains that more often achieved significance irrespective of untrained/trained, untrained or trained rater grouping were: I, Violent and Destructive Behavior; II, Antisocial Behavior; III, Rebellious Behavior; IV, Untrustworthy Behavior; V, Withdrawal; VI, Stereotyped Behavior and Odd Mannerisms; and XIII, Psychological Disturbances. The domains that achieved significance less often irrespective of the type of rater grouping were: VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; X, Self-Abusive Behavior; XI, Hyperactive Tendencies; XII, Sexually Aberrant Behavior; and XIV, Use of Medications.

Those domains that had the highest rate of achieving significant relationships irrespective of the type of rater grouping were: I, Violent and Destructive Behavior; and II, Antisocial Behavior. The domain that had the lowest rate of achieving a significant relationship irrespective of the type of rater grouping was domain XII, Sexually Aberrant Behavior, which was followed closely by domains VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; IX, Unacceptable or Eccentric Habits; X, Self-Abusive Behavior; and XI, Hyperactive Tendencies. Domain II, Antisocial Behavior, had the highest overall correlation average when all three units were considered together, while domain XII, Sexually Aberrant Behavior, had the lowest overall correlation average when all three units were considered together.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A study was devised to test the level of inter-rater agreement when mental retardates were rated by child care workers with the AAMD Adaptive Behavior Scale. Based upon the results of this study it was found that untrained raters achieved significant relationships in their domain scores more often than did trained raters. From these results it could be concluded that training had a negative effect; however, this result could also be related to the training technique, or other factors.

SUMMARY

After the revision of the AAMD Adaptive Behavior Scale in 1974, the AAMD cited a reliability study on the revised scale. This study was based on 133 institutionalized retardates who were rated by two ward personnel.

The AAMD claimed that its scale can be effectively used by individuals with little or no training. This claim, according to the AAMD manual, is based on the relatively simple scoring and administration procedures. Since the AAMD manual does not indicate that the raters used in the 1974 study were trained raters, it was assumed that they were not trained. The range of the

reliability coefficients in the 1974 study was from + .37 to + .77 on Part Two of the scale, and the mean reliability computed for Part Two was + .57.

The AAMD specified, in 1961, that a diagnosis of mental retardation must include deficiencies within the dimensions of adaptive behavior as well as measured intelligence. Therefore, it became incumbent on the AAMD to develop a means for measuring adaptive behavior. In 1969, the AAMD developed an instrument purported to measure the adaptive behavior dimension, which was revised in 1974.

This study was proposed in order to empirically test the claims that the Adaptive Behavior Scale can be administered effectively by untrained raters. In addition, it was decided that a reliability study based on only one pair of rater scores was insufficient. Therefore, this study undertook the task of using three pairs of raters of which one pair was trained in administration and scoring procedures, while the remaining two pair were not trained. Three different living units with retardates in each IQ classification of mental retardation were chosen from a state institution. Each unit was rated by three pairs of raters. The three units were composed of a total of 16 raters and 22 retardates.

The Kendall Coefficient, \underline{W} , was used to test the null hypotheses that there were no significant relationships between the scores of the untrained/trained and untrained raters in each of the 14 domains of Part Two of

the AAMD Adaptive Behavior Scale. The Pearson product-moment, r , was used to compute the score relationships between the trained raters. The results varied from one unit to another. The trained raters achieved less domain significance than either the untrained/trained raters, or the untrained raters. However, it should be pointed out that the trained raters accumulated more domain correlation coefficients above + .50 than did the rater combinations of untrained/trained and untrained raters when all three groupings of units were considered together.

Those domains that achieved significance across all rater types with only two exceptions were domains I, Violent and Destructive Behavior; and II, Antisocial Behavior. Both exceptions were the trained raters from units B and C; however, their respective correlation coefficients, in both instances, were well above + .50, which were considered rather high levels of inter-rater agreement even though significance was not attained. When considering the trained raters in all three units, no domain showed consistency in obtaining significance. However, when considering the grouping of untrained/trained and untrained rater relationships in all three units, four domains were found to be consistently significant. These domains were: I, Violent and Destructive Behavior; II, Antisocial Behavior; V, Withdrawal; and XIII, Psychological Disturbances. Therefore, when considering these two rater types in all three units together, the null

hypotheses that there were no significant relationships between the untrained/trained and untrained raters was rejected for these four domains. It follows that the null hypotheses were accepted for the remaining 10 domains when considering all three units and rater types together. Furthermore, the null hypothesis is also accepted for the trained raters when considering all three units together.

However, when considering each rater type with his respective unit acceptance and rejection of the null hypotheses that there were no significant relationships between the rater types varies from unit to unit. Specific information relating to each of the three rater types can be found in Chapter Four, but briefly unit A achieved more significant relationships in the different domains than did unit B or C, and unit B achieved more significant relationships in the different domains than did unit C.

CONCLUSIONS

The problem encountered in this study was to determine if there is a significant relationship between the scores of the untrained/trained, untrained and trained raters. Referring to the results discussed in Chapter Four, the data indicated that trained raters achieved significant relationships less often, and on less domains than did the untrained raters. Therefore, this suggested that training, for one reason or another, produced a

negative effect. Specifically, the particular method of training raters in this study may not have been the most effective method for training raters, and may be highly related to the negative findings between the trained raters in this study. In Chapter Four it was pointed out that rater attitudes were reflected by the degree of cooperation in complying with the researcher's instructions. The least cooperative raters were found to be the trained raters from units A and B, and all rater types in unit C. Therefore, this negative attitude could also be a factor that led to the negative effect produced by the trained raters. Finally, the factor of the amount of time the trained raters normally spent with the retardates in comparison to the amount of time the untrained raters spent with the retardates could also affect the inconsistencies between the scores of the trained and untrained raters. This factor was mentioned because the two child care worker supervisors, who functioned as trained raters in units A and B, do not spend as much time in direct supervision of the retardates as do the untrained raters. However, since the trained raters from unit C were regular child care workers and not supervisors, and since they achieved significance less often than the trained raters from either units A or B, this factor was not considered very significant.

Since each of the three units had varying degrees of success, what variables may have influenced this

variability? Since unit C was less cooperative in following the researcher's instructions, and since as a group, unit C achieved significance on the domains less often than did either units A or B, the attitude or motivation could be a related factor to the result that unit C achieved significance on the domains less often than did the other two units.

Unit A achieved significance on more domains than did unit B and unit B achieved significance on more domains than did unit C. Since the age ranges of the retardates was highest in unit A and lowest in unit C, the factor of age range could also be related to the results of this study.

Unit A, in comparison with units B and C, was equally divided by sex having four females and four males. Therefore, equally divided sex groups could be a variable of some importance since unit A had more significant relationships than the other two units. It should also be noted that unit A was composed of eight retardates, one more than either units B or C.

As indicated in Chapter One, another reason for pursuing this study was to see if the data from this study supported or failed to support the results of the reliability study cited in the AAMD manual. Based upon the reliabilities of the raters in unit A of this study, the reliability coefficients reported in the AAMD manual of the Adaptive Behavior Scale are supported for the following

domains: II, Antisocial Behavior; III, Rebellious Behavior; V, Withdrawal; and XIII, Psychological Disturbances. In unit B the following domains are likewise supported: I, Violent and Destructive Behavior; II, Antisocial Behavior; IV, Untrustworthy Behavior; V, Withdrawal; and XIII, Psychological Disturbances. In unit C this study supported domains I, Violent and Destructive Behavior; V, Withdrawal; VIII, Unacceptable Vocal Habits; and XIII, Psychological Disturbances. Those domains not mentioned received lower reliability coefficients than were obtained in the study cited in the AAMD Adaptive Behavior Scale manual.

Based on this data it was concluded that the results from Part Two of the AAMD Adaptive Behavior Scale in this study did not reflect or reproduce the results reported by the AAMD's reliability study since more than half of the 14 domains showed inconsistent inter-rater agreement. It was further concluded that the domain scores of the trained raters showed less significant relationships when compared with the untrained raters. There was also less significant relationships when the trained raters scores were compared with the grouping of the untrained/trained raters scores. Finally, there were no significant relationships in any domain between the trained raters when all three units were considered together.

RECOMMENDATIONS

Contrary to the claims made by the AAMD, the data obtained in this study did not produce high levels of inter-rater agreement on Part Two of the Adaptive Behavior Scale as reported in the AAMD Adaptive Behavior Scale manual. However, when viewing this scale from the perspective of individual domains, domains I, Violent and Destructive Behavior; II, Antisocial Behavior; IV, Untrustworthy Behavior; V, Withdrawal; and XIII, Psychological Disturbances, showed rather high inter-scorer reliabilities according to the data obtained in this present study.

Based upon an examination of those domains with low inter-rater reliabilities, it appeared that some of those domains had subjective content. For example, domain XII, Sexually Aberrant Behavior, is an area that could mean different things to different persons depending on the individual's cultural mores. The same argument applied for domains VI, Stereotyped Behavior and Odd Mannerisms; VII, Inappropriate Interpersonal Manners; VIII, Unacceptable Vocal Habits; and IX, Unacceptable or Eccentric Habits. Although domains III, Rebellious Behavior; and X, Self-Abusive Behavior, appeared to have more objective content, they tended not to be as objective as those domains with higher reliabilities. Therefore, it is recommended that more research be implemented regarding

the improvement of the objectivity of these domain items.

In addition to the faults in scoring and content of the Adaptive Behavior Scale reported at the end of Chapter Two, the dichotomization of scoring into "occasionally" signifying that the behavior occurs once in a while or now and then, and "frequently" signifying that the behavior occurs quite often or habitually appeared to be more of a subjective than an objective scoring system. In addition, the definitions for these terms appeared to be somewhat vague, for the booklet instructions do not specify the number of times a behavior should occur before it is labeled "occasionally" or "frequently". Therefore, a change in this scoring system to a more objective and less vague one is recommended.

Although this study used two more rater pairs than did the study cited in the AAMD manual, the latter study used 133 retardates, while this study used only 22 retardates. Therefore, it is recommended that further research into the reliability of this scale consider increasing the number of retardates to at least 133 to correct what must be considered a weakness of this study. In addition, since age and sex may influence test results, it is recommended that further research into the reliability of this scale consider controlling for sex and age variables. Furthermore, since attitude and motivation of the raters was considered a possible factor related to the negative results in this study, it is recommended that future research in

this area consider these factors, and attempt to obtain raters who are both interested and motivated to participate in the study.

Finally, it is recommended that if another study is undertaken using this particular study's method and procedure that a more intense training procedure be utilized to train raters in the scoring and administration procedures. This is recommended due to the negative effect of the trained raters in this study.

Reference Notes

1. Leland, H., Nihira, K., Foster, R., & Shellhaas, M. Proceedings of the First Congress of the International Association for the Scientific Study of Mental Deficiency, Surrey, England 1968.
2. Nihira, K. Ten Dimensions of Maladaptive Behavior in Mentally Retarded Early Adolescents. Proceedings of the annual convention of the American Psychological Association, 7(Pt. 2), 1972.
3. Greenwood, D., & Perry, R. Use of the Adaptive Behavior Checklist as a Means of Determining Unit Placement in a Facility for the Retarded. A Paper presented at the meeting of the Rocky Mountain Psychological Association, Denver, May 1968.
4. Foster, R., & Foster, C. The Measurement of Change in Adaptive Behavior. A Paper presented at the Region V meeting of the American Association on Mental Deficiency, Denver, October 1967.
5. Leland, H., Nihira, K., Foster, R., & Shellhaas, M. Conference on Measurements of Adaptive Behavior: II, Parsons State Hospital and Training Center, Parsons, Kansas 1966.

References

- American Association on Mental Deficiency. AAMD Adaptive Behavior Scale Manual (Rev. ed.). Washington, D. C.: Author, 1974.
- American Association on Mental Deficiency. A Manual on Terminology and Classification in Mental Retardation (Rev. ed.). Washington, D. C.: Author, 1973.
- Bhattacharya, S. Adaptive Behavior Scale Refinement. Mental Retardation, 1973, 11(1), 27.
- Bogen, D., & Aanes, D. The Adaptive Behavior Scale as a Tool in Comprehensive Mental Retardation. Mental Retardation, 1975, 13(1), 38-41.
- Christian, W. P., & Malone, D. R. Relationships among Three Measures Used in Screening Mentally Retarded for Placement in Special Education. Psychological Reports, 1973, 33(2), 415-418.
- Congdon, D. M. The Adaptive Behavior Scale Modified for the Profoundly Retarded. Mental Retardation, 1973, 11(1), 20-21.
- Foster, R., & Nihira, K. Adaptive Behavior as a Measure of Psychiatric Impairment. American Journal of Mental Deficiency, 1969, 74(3), 401-404.

- Guarnaccia, V. J. Factor Structure and Correlates of Adaptive Behavior in Noninstitutionalized Retarded Adults. American Journal of Mental Deficiency, 1976, 80(5), 543-547.
- Lambert, M., Windmiller, M., Cole, L., & Richard A. Standardization of a Public School Version of the AAMD Adaptive Behavior Scale. Mental Retardation, 1975, 13(2), 3-7.
- Leland, H., Shellhaas, M., Nihira, K., & Foster, R. Adaptive Behavior: A New Dimension in the Classification of the Mentally Retarded. Mental Retardation, 1967, 4(3), 359-378.
- Nihira, K. Factorial Dimensions of Adaptive Behavior in Adult Retardates. American Journal of Mental Deficiency, 1969, 73(6), 868-878.
- Nihira, K. Factorial Dimensions of Adaptive Behavior in Mentally Retarded Children and Adolescents. American Journal of Mental Deficiency, 1969, 74(1), 130-141.
- Nihira, K., Foster, R., & Spencer, L. Measurement of Adaptive Behavior: A Descriptive System for Mental Retardates. American Journal of Orthopsychiatry, 1968, 38, 622-634.
- Nihira, K. & Shellhaas, M. A Study of Adaptive Behavior: Its Rationale, Method and Implications in Rehabilitation Programs. Mental Retardation, 1970, 8, 11-16.
- Perozzi, J. A. Language Acquisition as Adaptive Behavior. Mental Retardation, 1972, 10(2), 32-34.

Tomiyasu, Y., Matsuda, S., & Murakamai, E. Y. Structure
of the Adaptive Behavior of the Mentally Retarded:
I. A Factor-Analytic Study. Japanese Journal of
Special Education, 1974, 12(1), 10-23. (Abstract)

APPENDIX A

Instructions for completing the AAMD
Adaptive Behavior Scale

A A M D
ADAPTIVE BEHAVIOR SCALE
For Children and Adults
1974 Revision

Name _____
(last) (first)

Special Identification _____

Date _____ Sex: ^M/_F Date of Birth _____
(mo) (day) (year) (mo) (day) (year)

Name of person filling out Scale _____

Source of information and relationship to person being evaluated (such as "John Doe - Parent," or "Self - Physician") _____

Additional Information: _____

This Scale consists of a number of statements which describe some of the way people act in different situations. There are several ways of administering the Scale; these, and detailed scoring instructions, appear in the accompanying *Manual*.

Instructions for the second part of the Scale immediately precede the second half of this booklet.

INSTRUCTIONS FOR PART ONE

There are two kinds of items in the first part of the Scale. The first requires that you select only **ONE** of the several possible responses. For example:

[2] Eating in Public (Circle only <u>ONE</u>)		
Orders complete meals in restaurants	3	
Orders simple meals like hamburgers or hot dogs	2	(2)
Orders soft drinks at soda fountain or canteen	1	
Does not order at public eating places	0	

Notice that the statements are arranged in order of difficulty: 3,2,1,0. Circle the one statement which best describes the *most difficult* task the person can usually manage. In this example, the individual being observed can order simple meals like hamburgers or hot dogs (2), but cannot order a complete dinner (3). Therefore, (2) is circled in the example above. In scoring, 2 is entered in the circle to the right.

© 1969, 1974, 1975 American Association on Mental Deficiency

The second type of item asks you to check ALL statements which apply to the person. For example

[4] Table Manners		
(Check ALL statements which apply)		
Swallows food without chewing	—	B number checked = 6
Chews food with mouth open	— <input checked="" type="checkbox"/>	
Drops food on table or floor	—	
Uses napkin incorrectly or not at all	— <input checked="" type="checkbox"/>	
Talks with mouth full	—	
Takes food off others' plates	—	
Eats too fast or too slow	—	
Plays in food with fingers	—	
None of the above	—	
Does not apply, e.g., because he or she is completely dependent on others. (If checked, enter "0" in the circle to the right)		

In the example above, the second and fourth items are checked to indicate that the person "chews food with mouth open" and "uses napkin incorrectly." In scoring, the number of items checked, 2, is subtracted from 8, and the item score, 6, is entered in the circle to the right. Most items do not, however, require this subtraction; instead, the number checked can be directly entered as the score. The statement "None of the above," which is included for administrative purposes only, is not to be counted in scoring here.

Some items may deal with behaviors that are clearly against local regulations, (e.g., use of the telephone), or behaviors that are not possible for a person to perform because the opportunity does not exist, (e.g., eating in restaurants is not possible for someone who is bedridden). In these instances, you must still complete your rating. Give the person credit for the item if you feel absolutely certain that he or she can and would perform the behavior without additional training had he or she the opportunity to do so. Write "AR" for "Against Regulation" or "HNO" for "Has No Opportunity" next to the rating made in these cases. These notations will not affect the eventual scoring of that item, but will contribute to the understanding and interpretation of the person's adaptive behavior and environment.

Please observe the following general rules in completing the Scale:

1. In items which specify "with help" or "with assistance" for completion of task, these mean with *direct physical assistance*.
2. Give the person credit for an item even if he or she needs verbal prompting or reminding to complete the task unless the item definitely states "without prompting" or "without reminder."

This Scale is prepared for general use. Therefore, some of the items may not be appropriate for your specific setting, but please do try to complete all of them.

INSTRUCTIONS FOR PART TWO

Part Two contains only one type of item. The following is an example

(2) Damages Personal Property	Occasionally	Frequently
Rips, tears, or chews own clothing	(1)	2
Soils own property	1	(2)
Tears up own magazines, books, or other possessions	1	(1)
Other (specify _____)	1	1
_____ None of the above	Total 1	4

Select those of the statements which are true of the individual being evaluated, and circle (1) if the behavior occurs occasionally, or (2) if it occurs frequently. Check "None of the Above" where appropriate. In scoring, total each column on the bottom (Total) line, and enter the sum of these totals in the circle to the right. When "None of the above" is checked, enter 0 in the circle to the right. In the above example, the first statement is true occasionally, and the last two statements are true frequently, therefore, a score of 5 has been entered.

"Occasionally" signifies that the behavior occurs once in a while or now and then, and "Frequently" signifies that the behavior occurs quite often, or habitually.

Use the space for "Other" when

1. The person has related behavior problems in addition to those circled.
2. The person has behavior problems that are not covered by any of the examples listed.

The behavior listed under "Other" must be a specific example of the behavior problem stated in the item.

Some of the items in Part Two describe behaviors which need not be considered maladaptive for very young children (for example, pushing others). The question of whether a given behavior is adaptive or maladaptive depends on the way that particular behavior is viewed by people in our society. Nonetheless, in completing this Scale you are asked to record a person's behavior as accurately as possible, ignoring, for the moment, your personal biases, then, when you later interpret the impact of the reported behaviors, you should take into consideration societal attitudes.

APPENDIX B
Data Summary Sheets

Identification _____

Age _____

Sex _____

Date of Administration _____

**DATA SUMMARY SHEET - AAMD ADAPTIVE BEHAVIOR SCALE
PART ONE**

A. Eating	△								
B. Toilet Use		△							
C. Cleanliness			△						
D. Appearance				△					
E. Care of Clothing					△				
F. Dressing & Undressing						△			
G. Travel							△		
H. General Independent Functioning	—————→								<input type="text"/>
I. INDEPENDENT FUNCTIONING									
A. Sensory Development								△	
B. Motor Development									△
II. PHYSICAL DEVELOPMENT									
—————→ <input type="text"/>									
A. Money Handling and Budgeting								△	
B. Shopping Skills									△
III. ECONOMIC ACTIVITY									
—————→ <input type="text"/>									
A. Expression								△	
B. Comprehension									△
C. Social Language Development									△
IV. LANGUAGE DEVELOPMENT									
—————→ <input type="text"/>									
V. NUMBERS AND TIME									
—————→ <input type="text"/>									
A. Cleaning								△	
B. Kitchen Duties									△
C. Other Domestic Activities									△
VI. DOMESTIC ACTIVITY									
—————→ <input type="text"/>									
VII. VOCATIONAL ACTIVITY									
—————→ <input type="text"/>									
A. Initiative								△	
B. Perseverance									△
C. Leisure Time									△
VIII. SELF-DIRECTION									
—————→ <input type="text"/>									
IX. RESPONSIBILITY									
—————→ <input type="text"/>									
X. SOCIALIZATION									
—————→ <input type="text"/>									

DATA SUMMARY SHEET

PART TWO

- | | | |
|----------------------------------------------------|--------------------------|-------------|
| <i>I. VIOLENT AND DESTRUCTIVE BEHAVIOR</i> | <input type="checkbox"/> | <i>I</i> |
| <i>II. ANTISOCIAL BEHAVIOR</i> | <input type="checkbox"/> | <i>II</i> |
| <i>III. REBELLIOUS BEHAVIOR</i> | <input type="checkbox"/> | <i>III</i> |
| <i>IV. UNTRUSTWORTHY BEHAVIOR</i> | <input type="checkbox"/> | <i>IV</i> |
| <i>V. WITHDRAWAL</i> | <input type="checkbox"/> | <i>V</i> |
| <i>VI. STEREOTYPED BEHAVIOR AND ODD MANNERISMS</i> | <input type="checkbox"/> | <i>VI</i> |
| <i>VII. INAPPROPRIATE INTERPERSONAL MANNERS</i> | <input type="checkbox"/> | <i>VII</i> |
| <i>VIII. UNACCEPTABLE VOCAL HABITS</i> | <input type="checkbox"/> | <i>VIII</i> |
| <i>IX. UNACCEPTABLE OR ECCENTRIC HABITS</i> | <input type="checkbox"/> | <i>IX</i> |
| <i>X. SELF-ABUSIVE BEHAVIOR</i> | <input type="checkbox"/> | <i>X</i> |
| <i>XI. HYPERACTIVE TENDENCIES</i> | <input type="checkbox"/> | <i>XI</i> |
| <i>XII. SEXUALLY ABERRANT BEHAVIOR</i> | <input type="checkbox"/> | <i>XII</i> |
| <i>XIII. PSYCHOLOGICAL DISTURBANCES</i> | <input type="checkbox"/> | <i>XIII</i> |
| <i>XIV. USE OF MEDICATIONS</i> | <input type="checkbox"/> | <i>XIV</i> |

APPENDIX C
Profile Summary Sheets

APPENDIX D
Additional Instruction Sheet

Additional Instruction Sheet

In addition to following the instructions in the scale booklet, the rater should be aware of the following scoring considerations:

First, where certain items are not applicable to the individual being rated (for example, the item referring to money changing ability may be inappropriate where the individual has no opportunity to handle money) the rater should ignore the item. Second, where items deal with situations that are against regulations, such as using the telephone, the rater should complete the rating by determining whether or not the individual could perform the task if it were allowed. Third, where items describe maladaptive behaviors not usually seen in very young children, such as items referring to aggressive behavior, the rater should try to record the behavior as accurately as possible.

717 Lindenwood Ave.
Topeka, Kansas 66606
October 12, 1977

Dr. Albert Berkowitz, Executive Director,
American Association on Mental Deficiency,
5101 Wisconsin Ave. N.W.,
Washington, D. C. 20016

Dear Dr. Berkowitz:

I am a graduate student from Emporia State University, Emporia, Kansas. This correspondence is directed for permission to reproduce parts of the AAMD Adaptive Behavior Scale, 1974 Revision, and to include these reproductions in the Appendix section of my masters thesis.

The subject of my thesis is a reliability study of the revised scale. Specifically, score comparisons were made between child care workers from the Kansas Neurological Institute, Topeka, Kansas who rated a selected retardate sample. When this study is fully accepted by the graduate department, it will be placed in the university library.

As I indicated during our phone conversation, I will need a letter from you granting me permission to reproduce the following parts of the scale: A) Instructions for both Part I and Part II. B) Data Summary Sheets for both Part I and Part II. C) Profile Summary Sheets for both Part I and Part II.

Thanking you and hoping to hear from you, I am,

Westley E. Tatman
Westley E. Tatman

AAMD

FOUNDED 1876

AMERICAN ASSOCIATION ON MENTAL DEFICIENCY

5101 Wisconsin Avenue, N.W., Washington, D. C. 20016

202/686-5400

October 26, 1977

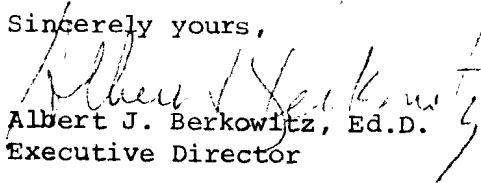
Mr. Westley E. Tatum
717 Linderwood Ave.
Topeka, Kansas 66606

Dear Mr. Tatum:

In response to your request for permission to reprint material from the AAMD Adaptive Behavior Scale, I have reviewed your request and permission is hereby granted. It is understood that full acknowledgment to the AAMD will appear upon distribution of the paper.

I wish you continued success.

Sincerely yours,


Albert J. Berkowitz, Ed.D.
Executive Director

AJB:gel