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ASSESSING MANIFEST COPING BEHAVIOR OF
MENTALLY RETARDED INSTITUTIONALIZED MALES
WITH AN OBSERVATIONAL TECHNIQUE

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree of Master of Science

By

Daryle I. Bass

KANSAS STATE COLLEGE OF PITTSBURG

Pittsburg, Kansas

April, 1967

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ABSTRACT

It was the purpose of the present study to explore the feasibility of investigating naturally occurring behavior of mental retardates with an observational technique.

Twelve mentally retarded male subjects, ages sixteen to twentieth-one, with Adaptive Behavior levels of upper III, were observed for a total of four observational time blocks of fifteen minutes each. From the collected data 105 behavioral events were extracted, and sorted as to their appropriateness or inappropriateness in the behavioral setting. Each subject was assigned scores based on frequency counts of occurrence of appropriate and inappropriate behaviors manifested during his four observational time blocks. Rank correlations and partial correlations were executed comparing these data with indices derived from testing of these subjects with Wechsler intelligence tests and the Experimental Test of Social Inference.

Several meaningful relationships were discerned, and while the conclusions are generally guarded, it is felt the study demonstrated the worth of a direct observational method in the study of symptomatic behavior of mental retardates, and provides implications for further study.

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CHAPTER I

INTRODUCTION TO THE PROBLEM

In a message to the eighty-eighth congress of the United States, the late President John F. Kennedy asserted that mental retardation is among the nation's most critical health problems, and reported that there are more than five million mentally retarded adults and children in the United States.¹ The United States Secretary of the Department of Health, Education, and Welfare, Anthony J. Celebrezze, placed the number of mentally retarded in the United States in 1963 at 5.4 million and estimated that about 96 per cent were being cared for outside residential institutions.²

Of these more than five million mental retardates who are "surviving," with varying degrees of success, outside the nation's institutions, many have never been identified as being mentally retarded. Certainly many of the recipients of public assistance of the various types are known or suspected mental retardates; however, many other retardates remain noninstitutionalized and free from agency contact

¹John F. Kennedy, "Mental Illness and Mental Retardation," Message to the House of Representatives, Eighty-eighth Congress, Session I, Document 58 (Washington: Government Printing Office, 1963), p. 8.

²Anthony J. Celebrezze, "Mental Retardation Program of the United States Department of Health, Education, and Welfare FY 64," Secretary's Commission on Mental Retardation (Washington: Government Printing Office, 1963), p. 11.

and, thereby, avoid being "detected" and labeled as mentally retarded. A legitimate question might be: what are the factors operating that allow 96 per cent of the retarded population to remain outside of institutions while discriminating against the remaining 4 per cent? Certainly there are considerations of family constellation, family self-sufficiency, pervasive mores, and ethnic patterns, as well as individual differences of the retardates themselves, such as extent of retardation and stigmata. However, the final consideration seems to be the extent to which the individual can remain invisible in, and be absorbed by, the community.

In many instances, then, it would appear that a breakdown in social functioning--that is, an inability to cope effectively with the demands of the environment--would seem to be the final consideration which determines institutional placement. An individual may be retarded psychometrically, but as long as he can maintain and prove himself to be a capable, participating and contributing member of society, free from adverse notice, society will accept him.

Statement and Exposition of the Problem

It is the purpose of the present study to explore the feasibility of investigating naturally occurring behavior of mental retardates with an observational technique.

It has long been felt that mere etiological, nosological, and psychometric classification schemes have proved inadequate in planning for rehabilitation of the mentally retarded, specifically, those retardates who have been identified. Additional means of assessment are needed which take into account the more individualized patterns of coping with the environment.

Evidence for the shortcomings of present methods of classification and assessment is abundant in studies relating to the success or failure of mental retardates in social and vocational settings. The literature is replete with studies citing the inadequacies of present methods of assessment, especially intelligence tests, in predicting success of mental retardates in the community.³

Essentially disclosed as explanations for failure are reasons usually classified under the rubric of personality problems. Problem behaviors, when reported, are usually classified as antisocial or asocial in nature, with no further descriptions offered. No definitive new dimensions of mental retardation have emerged to resolve prediction problems or to facilitate amelioration of the conditions which discriminate against 4 per cent of the retarded population, exclusive of ethnic, social, and economic considerations.

³Charles Windle, "Prognosis of Mental Subnormals," Monograph Supplement to American Journal of Mental Deficiency (March, 1962).

The concept of adaptive behavior as a proposed new dimension in classification was first formally defined and discussed by Heber.⁴ This new dimension referred "primarily to the effectiveness of the individual in adapting to the natural and social demands of his environment," and had two major facets: "(1) the degree to which the individual is able to function and maintain himself independently, and (2) the degree to which he meets satisfactorily the culturally imposed demands of personal and social responsibility." According to Heber, an impairment in adaptive behavior could be reflected in (1) maturation, (2) learning, and/or (3) social adjustment. These three aspects of adaptation were considered to be of different importance as qualifying conditions of mental retardation for different age groups and were plotted along a four-level classification system.

Although this new dimension of mental retardation was hailed as an exciting one by many workers in the field, it has remained an elusive one, too tied to the concept of measured intelligence and, therefore, according to Leland, "...has not been able to take its place as a separate and distinct quality."⁵

⁴Rick Heber, "A Manual on Terminology and Classification in Mental Retardation," Monograph Supplement to American Journal of Mental Deficiency (September, 1959), p. 61.

⁵Henry Leland, "Some Thoughts on the Current Status of Adaptive Behavior," Mental Retardation, II (June, 1964), p. 171.

Leland proposed that the dimension of adaptive behavior be further separated from measured intelligence and expanded along a five-level system to include rehabilitation objectives. Levels of independent functioning, personal responsibility, and social and civic responsibility were considered the major facets of the expanded definition. Leland also added to Heber's original definition the concept of "invisibility," a concept which takes into account factors relating to overall general appearance and behavior, with what might be termed social effectiveness as its pivotal theme. Briefly stated, the concept of invisibility holds that if an individual can successfully cope with the demands of his community, he may be able to escape adverse notice in that community and be completely accepted and absorbed by it, without regard to his intelligence quotient.⁶

Support for this contention may easily be garnered from many quarters. Several items have appeared in the literature which support the importance of invisibility as it relates to successful community adjustment of retardates--that is, their ability to cope successfully with the demands of the community, including escaping adverse notice. Windle, when describing the characteristics of mental retardates, conceived of the retarded

⁶Henry Leland, "What is a Mentally Retarded Child?" Journal of Psychiatric Nursing, II (January, 1964), pp. 21-36.

population as one of the many pools of rejects from society.

He noted that:

Communities seem to have tolerance thresholds for various kinds of misbehavior... (and) members of society who fall below these tolerance thresholds are removed temporarily from society. (and further elaborated) When the misbehavior is of certain types, the person involved appears mentally subnormal, and facilities are available, the person is committed to an institution for subnormals.⁷

Goldstein, upon perusing the literature concerning the reasons retardates frequently change jobs, noted:

Reasons for changing jobs frequently have to do with dissatisfaction on the part of the retarded. There is some evidence, however, that suggests that retarded workers also have a more difficult time being accepted by their fellow workers.⁸

Immature responses to teasing and ridicule were prominent among the reasons stated for this rejection by fellow workers and, quite often, it appeared that mental retardates first invited the invective of their fellow workers by behavior which demonstrated lack of social and vocational sophistication.

It appears, then, that mental retardates do manifest certain kinds of behaviors which can and do draw unfavorable attention to themselves (that is, incur negative visibility). Many do fail to obtain and hold gainful employment for reasons other than their lack of job skills.

⁷Windle, op. cit., p. 8.

⁸Herbert Goldstein, "Social and Occupational Adjustment," in Harvey A. Stevens and Rick Heber (eds.), Mental Retardation (Chicago: University of Chicago Press, 1964), p. 254.

Since social ineptitude is so often cited as making the critical difference between success and failure in employment, as well as the attainment of successful adjustment in the community, it would appear desirable to develop means of examining existing behaviors as a requisite condition for implementing effective remedial programming. This study is based on the assumption that it is not new classification schemes that are needed, but rather new ways of viewing the behaviors which are being classified.

The present study proposes to explore the feasibility of employing an observational technique as one means of elucidating the concepts of social invisibility and social effectiveness in general, and manifest coping behavior in particular.

Scope and Limitations

This study included as subjects only those individuals who comprise the population of upper adaptive behavior level III males, between the ages of sixteen and twenty-one, at Parsons State Hospital and Training Center during the months of June, July, and August, 1964. This institutionalized population was used because of its accessibility and relative homogeneity.

This study is considered exploratory in nature, and inferences and conclusions will only be drawn tentatively

and cautiously as they pertain to the observational technique under investigation with the population under study. It does not in any manner purport to provide discrete information or establish any classification indices for this population.

No attempt was made to control for the influence of the observers in the natural habitat for reasons which will be discussed in Chapter II.

Definition of Terms

Behavior Event - refers to a simple unit of behavior, readily observed and discriminated from the stream of behavior as a separate unit.

Setting-Specific - refers to those aspects of any setting unique to that setting and generally considered synomorphic to/in that setting.

Mental Retardation - is used here to encompass all the meanings previously ascribed to such concepts as idiocy, imbecility, moronity, amentia, feeble-mindedness, mental deficiency, mental subnormality, and the like.

Social Perception - refers to the ability to "read" a social situation, that is, note from the cues which are present, which are relevant, infer from these what is on-going, and what and why certain behaviors would be most appropriate.

Invisibility - refers to the general appearance and behavior, which will allow the individual to escape

adverse notice, that is, an individual must function in such a way that he does not draw undue, unfavorable attention either to himself or to others around him.

Adaptive Behavior Level III Retardate - according to the criteria currently in use at Parsons State Hospital and Training Center (PSH&TC), these individuals are capable of limited social and economic functioning but will be dependent upon total environmental control and support (See Appendix A).

Synomorphism - refers to the perceived fittingness between patterns of behavior and attributes of the nonpsychological context to which they are anchored. For example, conversation occurs at parties rather than in church, and praying takes place in a church rather than on a beach, and one would write with a pencil rather than with a soda straw.

CHAPTER II

REVIEW OF LITERATURE

Although direct observation has been a methodological mainstay in many other sciences it has remained virtually an untapped method in the investigation of human behavior. According to Wright, direct observation has stood as the basic method of several natural and physical sciences, including astronomy, the earth's sciences, and the natural history disciplines in biology, as well as of sociology and anthropology.⁹ Wright points out that often contributions to science gained by direct observation may not always be so revolutionary as procedures that manipulate events, but their contributions have been substantial over the long run of progress in science.¹⁰ It has often proved to be the method which discerned new vistas for other kinds of investigation and paved the way for the collection of certain classes of empirical facts.

Wright summarized the historical value of observation thus:

. . . purely observational methods have enabled scientists to record the true appearance and the distribution in nature of countless phenomena, to discover new

⁹Herbert F. Wright, "Observational Child Study," in P. H. Mussen (ed.), Handbook of Research Methods in Childhood Development (New York: John Wiley and Sons, Inc., 1950), p. 72.

¹⁰Ibid.

things from microorganisms to galaxies, to find new problems, to anticipate the needs of theories for hard empirical facts, hence to avoid the vulgarities of easy speculation, and even to test theories where experimental arrangements were difficult or impossible.¹¹

Wright recommends a "review of psychological methods in child development with the common base of direct observation."¹²

Others have also argued rather convincingly for more research using direct observation as a method. Scott felt psychology never enjoyed a great period of description and comparison, because, experimentalism was already in vogue before a serious study of psychology was undertaken.¹³ Scott noted that "the pressure of clinical problems has forced many psychologists to the realization that observation and description are necessary precursors to experimentation." Scott averred that many of the important unsolved problems of human behavior lie in the field of social relationships and personality interaction, where structured tests and testing situations cannot possibly duplicate real life situations.¹⁴

¹¹Ibid.

¹²Ibid.

¹³J. P. Scott, "The Place of Observation in Biological and Psychological Science," The American Psychologist, X (February, 1955), p. 62.

¹⁴Ibid., p. 63.

Forscher, in a satirical vein, also pointed out some resultant problems of a narrow experimental orientation.¹⁵

Jersild and Meigs emphasized the importance of the direct observation method as a way to study children functioning in natural situations, in preference to relying exclusively on other kinds of static measures, derived from manipulated situations.¹⁶

Gellert felt that systematic observations minimized many of the omissions and distortions of data obtained from recall as well as diminished the individual differences among various judges of behavior.¹⁷

Barker and Wright pointed out the advantages of using direct observation as a technique for studying naturally occurring behavior, namely, to report the "state of affairs that exists independently of the investigator's method."¹⁸

The obvious shortcoming of structuring a situation for the subject and then describing his performance within

¹⁵Bernard K. Forscher, "Chaos in the Brickyard," Science, CXLII (October, 1963), p. 339.

¹⁶Arthur T. Jersild and Margaret F. Meigs, "Direct Observation as a Research Method," Review of Educational Research, IX (December, 1939), p. 472.

¹⁷Elizabeth Gellert, "Systematic Observation: A Method in Child Study," Harvard Educational Review, XXV (Summer, 1955), p. 179.

¹⁸Roger G. Barker and Herbert F. Wright, Midwest and It's Children (New York: Row, Peterson, and Company, 1954), p. 13.

it, is that the situation, in itself, is artificial. When the investigator structures the subject's psychological field for him by asking certain questions or posing certain problems, he is changing the subject's natural habitat and therefore distorts or destroys the very behavior he wishes to study. Actually, the investigator is only studying how the subject reacts to an investigator in certain structured situations, which for the most part are not apt to be duplicated in the natural habitat.¹⁹

Several authors have surveyed various modifications of direct observation and discussed many of the problems and shortcomings endemic to each. Jersild and Meigs, in an early overview of observational techniques, noted how the method of direct observation could be applied in homes, classrooms, camps, discussion groups, and playgrounds, and the like. It could be applied in situations where the investigator injected structure, or left the setting as nearly natural as possible. The observer could be selective to any degree as to any class of behavior, or attempt to observe and record all. The length of observational periods also could vary at the discretion of the individual investigator.²⁰

¹⁹Ibid.

²⁰Jersild and Meigs, op. cit., pp. 473-474.

Gellert later reiterated many of Jersild and Meigs' arguments for the method, and delved into the many problems relative to this method of study. In addition to endorsing direct observation as a technique, she pressed for study of specific, theory-determined aspects of behavior, to test stated hypotheses and/or answer particular questions about behavior.²¹

Wright, also, pressed for the more extensive use of direct observation as a method of gaining knowledge about behavior, noting the impossibility of duplicating naturally occurring behavior in the laboratory.²²

These authors have also discussed the major methodological problems connected with direct observation as being: (1) the reliability of the observation, (2) the influence of the observer in the setting, (3) the what and why of data collection--how much and what to observe and how to reduce the data to meaningfulness once it has been obtained.

A variety of solutions has been offered in an attempt to solve or minimize these problems. Prall and others, in a 1958 symposium concerning observational research with emotionally disturbed children, recognized the

²¹Gellert, op. cit., pp. 179-194.

²²Wright, op. cit., pp. 71-130.

influence of the observer in the milieu, but felt that the influence was attenuated over time, as the observed became used to the presence of the observer.²³

Jersild and Meigs, in agreement, noted in addition that "whatever the observer's effect may be, it is not likely to be so pronounced in the long run that records fail to show individual differences." They stated that "as time passes habitual practices and interactions between individuals in the group come to the fore..."²⁴

Barker and Wright noted that the influence of the observer in the natural habitat can be minimized through familiarity, openness, and candor, whereby the observed get to know and accept the observer's presence and become accustomed to him over time until he seems to fade into the background.²⁵ They cautioned that attempts at concealment or unnatural unobtrusiveness tend to appear forced and accent rather than attenuate the observer's presence. Naturalness, friendliness, nondirective and nonparticipating candor, they felt, could do much to obviate any guinea pig feelings the subjects might develop.²⁶

²³Robert C. Prall, and others, "Observational Research with Emotionally Disturbed Children: Session I, Symposium, 1958," American Journal of Orthopsychiatry, XXIX (April, 1959), pp. 223-243.

²⁴Jersild and Meigs, op. cit., p. 480.

²⁵Barker and Wright, op. cit., pp. 210-212.

²⁶Ibid., p. 211.

Bishop felt that the problem of reliability of the observer could often best be solved by allowing room for observer inference,²⁷ a feature which, according to Heider, is a necessary part of any observation.²⁸ Others have sought greater reliability by breaking units of behavior into finer and finer portions.²⁹

Gellert felt that a lack of reliability was a function of one or more of thirteen factors, ranging from inadequate sampling and vague definitions, to errors attributable to observer ineptitude.³⁰

Jersild and Meigs noted that reliability measures were greatly affected by the degree to which predetermined categories were used, while King and others approached the problem with inter-observer discussion of the category meanings. They held that agreement could be improved by inter-observer discussions.³¹ (Unfortunately, this method

²⁷Barbara M. Bishop, "Mother-Child Interaction and the Social Behavior of Children," Psychological Monograph, LXV (November, 1951), pp. 1-34.

²⁸Fritz Heider, "Social Perception and Phenomenal Causality," Psychological Review, LI (November, 1944), pp. 358-374.

²⁹Wright, op. cit., p. 119.

³⁰Gellert, op. cit., pp. 185-187.

³¹G. F. King, J. C. Erhmann, and D. M. Johnson, "Experimental Analysis of the Reliability of Observations of Social Behavior," Journal of Social Psychology, XXXV (January, 1952), pp. 151-160.

of increasing reliability can also serve to increase statements of behavior which do not necessarily reflect the behaviors they purport to describe.)

Wright, while not ignoring the importance of reliability in observational records, set forward the argument that significant observation should be considered first, and then the following questions concerning reliability might be asked of the obtained findings: "Are they internally consistent? Are they in line with tenable theories? May they even be full derivations from theory? Do they show relationships that outdo chance?"³² He felt that if affirmative answers could be obtained to these four questions, then doubts as to the reliability of the observations would seem to be legitimately diminished.³³

The difficulties of obtaining meaningful and utilizable data have been discussed by several investigators. Jersild and Meigs pointed out that the choice of whether to be selective in recording observations or to attempt to record all occurrences by a running account is basically a problem of the individual investigator's purpose. Whether or not the investigator might desire a certain range of behaviors to the exclusion of others, or

³²Wright, op. cit., p. 122.

³³Ibid., p. 122.

whether he desires the freedom to later capitalize on other incidental findings will be a consideration which influences his collection of data.³⁴

Gellert answered Jersild and Meigs's criticism of category observing by noting that categorical, selective observing generally is more reliable as well as mechanically efficient in respect to the amount of extraneous behavior to which the observer would have to attend, and record, in addition to the variables of interest. She concluded that running accounts seemed best suited for the exploratory phases of a research study, while category observing might prove more efficient once the variables of interest have been identified and operationally defined.³⁵

Although Barker and Wright agreed that the line between partly inferential description of behavior and interpretation or theorizing is hardly a dichotomy, they asserted that it is not difficult to make the distinction in practice.³⁶ They resolved the problem in their exhaustive study of the psychological ecology of a small town by using the following working rule:

³⁴Jersild and Meigs, op. cit., p. 473.

³⁵Gellert, op. cit., pp. 181-182.

³⁶Barker and Wright, op. cit., p. 209.

In observing and reporting, the observer should think in terms of the intentions of the subject and the things tied in with each intention, leaving the dynamics of his situation for later study. (*Italics in the original*)³⁷

While they admitted to the necessity of minor interpretations about observed behavior rather than mere descriptions, Barker and Wright further noted that these minor interpretations were always "couched in the idiom of everyday social experience," and were identified as being observer interpretations, and therefore could be employed in analysis or ignored as it was later deemed fit. Minor interpretations were often deemed clarifying of observed behavior and situations, but theorizing by observers was always discouraged, and ignored in interpretation.³⁸

Barker and Wright, in further defense of behavioral description which might be assailed as being too subjective, advanced the argument that through attempts to make the observations overly objective, much of the significance or richness of the behavior is actually lost. They noted how actions can and do vary in energy level, tempo, efficiency, and persistence, as well as in manifest affectivity, level of satisfaction or dissatisfaction, and emotional quality. Also, they noted how actions

³⁷Ibid., pp. 208.

³⁸Ibid., pp. 208-210.

could differ in outcome, some failing and others succeeding. In summary, they argued that:

...psychology is by no means prepared to name systematically all the kinds and dimensions of molar behavior... We do not know enough about the natural history of actions to collect them for study by rigidly systematic techniques.³⁹

Wright, in his critical review of observational child study, defined direct observation as being direct in two ways: (1) No planned arrangements stand between the observer and his target phenomena, and (2) neither does appreciable time: recording closely follows observing. As Wright pointed out, these two limitations exclude all forms of testing and interviewing, as well as manipulative experiments, and retrospective descriptions of case studies. With these two limitations imposed, one can only study naturally occurring behavior in the settings of everyday life.⁴⁰

It might be noted in conclusion that Wright's arguments seem in accord with the zeitgeist in the field of mental retardation where the trend has been away from etiological classification and toward symptomatic classification--where direct observation is almost an indispensable technique in data collection.

³⁹Ibid., pp. 187-188.

⁴⁰Wright, op. cit., p. 71.

Heber, among others, has given impetus to this trend away from traditional schemes, where often diagnoses were proffered as describing all aspects pertinent to any individual in that diagnostic class; toward symptomatic classification of retardates, where gross oversimplifications would be avoided in favor of delineation of exhibited behavioral referents with implications for treatment and training.⁴¹

Heber has advocated the use of the Vineland Social Maturity Scale (VSMS) as one tool in the assessment of symptomatic behavior. The VSMS is an instrument, which, in a rather oblique fashion, relies on direct observation to gain its raw data: informants are requested to recall past unsystematic observation regarding the subject's ability or inability to perform certain kinds of tasks. These retrospective descriptions, which are dependent on the informants' memory of past behavior as well as their ability to convey this data to the examiner, are then utilized by the examiner to derive a social age for the subject.⁴²

Even though Doll, author of the VSMS, admonishes users of his scale that it is not a rating scale and

⁴¹Rick Heber, "A Manual on Terminology and Classification in Mental Retardation," Monograph Supplement to American Journal of Mental Deficiency (2nd ed.; April, 1961), pp. 55-56.

⁴²Ibid., pp. 61-64.

scores are not to be based on mere opinions, that the informants serve only to inform the examiner and do not make any scoring judgments as such, it is nonetheless the informants' memories of direct observations which are relayed and used to form the basis for the examiner's assigning of a score.⁴³

The Cain-Levine Social Competency Scale⁴⁴ and Gunzburg's Progress Assessment Chart⁴⁵ avoid some of the pitfalls of the VSMS, mostly by widening the classes of behavior to be sampled, but also rely on secondhand ex post facto information in order to gather their data, from which classification is assigned. The same criticisms can generally be made of numerous other rating scales, questionnaires, and personality assessment devices currently in use.

⁴³Edgar A. Doll, Vineland Social Maturity Scale Manual of Directions (Minneapolis-Nashville-Philadelphia: Educational Test Bureau, Educational Publishers, Inc., 1947), pp. 1-18.

⁴⁴Leo F. Cain, Samuel Levine, and Freeman F. Elzey, Manual for the Cain-Levine Social Competency Scale (Palo Alto, California: Consulting Psychologists Press, 1963), pp. 1-17.

⁴⁵H. C. Gunzburg, Progress Assessment Chart (4th ed.; London: N.A.M.H. Publications Ltd., 1965), pp. 1-4.

CHAPTER III

DESIGN OF THE STUDY

Description of the Plan

Although a review of the literature reveals that many students of human behavior have noted the value of direct observation as a technique of investigating behavior and have urged its extended development as a means of obtaining answers to both questions of theory and application, it has remained largely an underdeveloped technique in the study of behavior of mental retardates. The present study was undertaken as one initial step in exploring the feasibility of direct observation in assessing the manifest coping behavior of mental retardates.

The theoretical foundation for the present study stems from the technique of data collection which Barker and Wright used in their study of the psychological ecology of a Midwestern town.⁴⁶ They forwarded the notion that an observer could within certain limits describe and record adequately any behavior by a person as it occurs, using techniques which utilize common language and common observation.⁴⁷ The present endeavor will attempt to

⁴⁶Roger G. Barker and Herbert F. Wright, Midwest and It's Children (New York: Row, Peterson and Company, 1954).

⁴⁷Ibid., p. 187.

describe all behavior of the subjects, in running narrative form, and will avoid manipulation of either the subjects or their milieu in any manner. It is realized that not all behavior will be observed and recorded, but this shortcoming is considered a function of the present state of precision of the method and not inherent in the technique itself. The making of judgments as to which classes of behavior to observe is considered a step in the later development of this technique as an assessment device.

Barker and Wright have also argued that reduction statements be made later; interpretations are only to be considered after the data are in. They point out that while reduction statements do indeed work to make behavioral descriptions more simple and objective, they carry the danger of losing the contextual elements of the behavior.⁴⁸ For example, whether or not another person is present could, and usually would, make the critical difference when judging the verbal behavior of any individual. If he were issuing greetings to a blank wall, certain kinds of judgments could be made that would not necessarily be made if his remarks had a human recipient, and it is commonly known that variations in intonation and inflection of voice can and do connote different meanings, and serve to elicit different kinds of responses from others, even though the denotative words uttered remain unchanged.

⁴⁸Ibid., pp. 186-188.

It is held to be particularly important to know what might have surrounded the behavioral event: John struck Jim on the chin with his fist (or John moved his clinched right hand at the rate of so many centimeters per second, through an arc of 30 degrees, a distance of so many centimeters, terminating its travel so many millimeters right or left of center of Jim's mandible). It would seem enlightening as well as rewarding from the standpoint of understanding the action to know what occurred 5, 10, 20, or even 60 seconds before John perpetrated this act: what if anything did Jim say or do? The observable antecedents to the behavior would seem to be quite relevant.

The present endeavor was undertaken with these ramifications of diverse interpretations in mind and, while being cognizant of the opportunity for error, the present method was employed because it offered the breadth and flexibility necessary to accomplish its stated purpose. The present study holds that an adequate description of the context--"physical and psychological habitat"--in which any behavior occurs seems necessary. An assay of the contextual properties seems necessary to explain not only what happens but how--and allow speculation as to why.

Following Barker and Wright, the present observers were given the freedom to make and record synoptic judgments; however, the observers were admonished to

include as many of the molecular details from which the synoptic judgments were inferred as feasible. The characteristics on which the inferences were based were to be included when feasible to make a better record. Interpretations which summarized behavior and ascribed motives to behavior were to be avoided while inferential description of the pertinent contextual elements which were present were recorded.

The PSH&TC Canteen was chosen as a setting for the present study because of the synomorphism between it and the kinds of behavior presently under study. Following Barker and Wright's thinking it was assumed that the "standing behavior patterns"⁴⁹ of the subjects in the canteen would most nearly approximate those situations where characteristic unsupervised coping behavior would be exhibited.

As one means of testing the meaningfulness of the observational data, two independent criterion measures of known and theorized dimensions were correlated with the observational data to test the interrelationships. The Weschler Adult Intelligence Scale and Weschler Intelligence Scale for Children are felt to be widely known and need no further explanation. The Test of Social

⁴⁹Ibid., pp. 45-46.

Inference (TSI)⁵⁰ was developed along the theory that the mental retardate often fails to achieve social acceptance--that is, manifests undesirable social traits or characteristics--because of or related to the slowness or inability to detect and read customary social cues, which, if utilized, would guide him to/in appropriate social interaction.⁵¹ The retardate customarily responds to social situations in an almost enumerative way, often not "getting the point" of the situation which would give him the prescription for a successful approach to the situation.⁵²

The Test of Social Inference consists of a series of thirty-five pictures covering a wide range of social scenes, some familiar and relatively uncomplicated, others less familiar and complex.⁵³ The TSI pictures were selected for their nonambiguity through trials with

⁵⁰ Barbara Edmonson, John de Jung, Henry Leland, and Ethel Leach, Test of Social Inference (copyright, Kansas City, Kansas: 1966, see Appendix I).

⁵¹ Barbara Edmonson, John de Jung, and Henry Leland, "Social Perceptual (Nonverbal Communication) Training of Retarded Adolescents," Mental Retardation, III (October, 1965), pp. 7-9.

⁵² Ibid.

⁵³ Barbara Edmonson, Henry Leland, and Ethel Leach, "Increasing Social Cue Interpretations of Retarded Adolescents Through Training" (paper presented at District V Regional Conference A.A.M.D., New Orleans, October, 1965).

groups of nonretarded eighth and ninth grade students of average intelligence.⁵⁴ Scoring is accomplished in terms of inferences and errors earned. Administration and scoring are standardized. Through a rather extensive test development program, the test has been shown to be a stable measure over time by the magnitude of test-retest coefficients of correlation, and by the insignificant gains in mean inference scores on retest following one and nine-week intervals with retarded subjects.⁵⁵

The TSI has also been demonstrated to be an effective discriminator among three populations of special education students, institutionalized retardates, and nonretarded eighth and ninth graders, with mean inference scores for these three populations differing from one another significantly with a chance occurrence of less than .001.⁵⁶

Description of the Sample

The 12 subjects in the study were drawn from the population of 16 male retardates, ages 16-21, with assigned adaptive behavior level of upper III in residence at Parsons State Hospital and Training Center, Parsons, Kansas, during the months of June, July, and August, 1964. Four

⁵⁴Ibid., p. 2.

⁵⁵Ibid.

⁵⁶Ibid.

of the 16 subjects were omitted from the study owing to their failure, for administrative reasons, to meet the availability for observation criterion of 75 per cent of the study's duration. The subjects ranged in chronological age from 16 years-1 month to 19 years-2 months with a mean of 18 years-3 months. Most recent full scale scores on the Weschler Intelligence Scale ranged from 46 to 68 with a mean of 57. Length of institutionalization varied from 3 years 2 months to 10 years 3 months with a mean of 6 years 3 months (Table I).

This population of retardates is relatively homogeneous and functions as a social unit within the institution, working on similar jobs, living on the same cottage, and engaging in most recreational activities as a group. The majority of these subjects are generally very well acquainted with each other.

Description of the Setting

The behavioral setting chosen for the present study was the student canteen at Parsons State Hospital and Training Center, Kansas (PSH&TC), because it most nearly approximates a free-field social setting within the institution, of a homogeneous population, and is a setting common to all subjects.

In the canteen, during regularly scheduled periods twice a week, these subjects are allowed to fraternize

TABLE I

CHARACTERISTICS OF THE SUBJECTS

Subject	Age*	Weschler FS Scores	Length of Institutionalization
1	19-10	63	5-3
2	19-0	56	8-9
3	18-5	53	4-10
4	19-0	46	3-8
5	17-6	66	10-3
6	16-1	55	10-0
7	17-3	50	4-11
8	17-8	68	3-2
9	18-0	54	9-8
10	19-3	63	3-6
11	18-3	51	6-6
12	18-10	59	4-3

* Chronological values given in years and months

among themselves and with a corresponding female population with little supervision or intervention from authority figures representing the institution. This is in exception to usual institutional policy where separate programs for the sexes are the rule and supervision is more stringent.

PSH&TC is a residential institution with facilities for 675 retarded individuals between the ages of 6 and 21, at all levels of measured intelligence and adaptive behavior, excluding patients who are nonambulatory. The institution is dedicated to the philosophy that each and every retarded individual has worth and unrealized potential which once developed will eventually allow him successful integration into society.

Description of the Procedure

The observational data were collected by two trained observers who, independently, kept a running narrative account, written in longhand, of the behavioral incidents for each subject during that subject's observational timeblocks. Recording was by description and frequency of the behavior occurrence. No attempt was made to draw inferences as to the underlying motives which gave rise to their behavior, or to judge the subjects' attitudes or perceptions either at the time the behavior occurred or later. An inter-observer training phase preceded the actual gathering of the data at which time inter-observer

agreement of 94 per cent was obtained using all behavioral events observed and reported by the two observers in the four practice pre-testing timeblocks of 15 minutes each. Subsequent reliability checks yielded inter-observer agreements ranging from 91 to 99 per cent with a mean of 96 per cent.

Initially, a pool of forty-eight observational timeblocks (OTB) was set up. The subjects, in randomized order, were then each randomly assigned four OTBs of 15 minutes each, with the added stipulation that at least five other observational time periods must intervene between any two OTBs for any subject.

From the collected data, 105 behavioral events were extracted (See Appendix B). These behavioral events were typed on separate 3x5 cards, shuffled, and presented for sorting to each of seven staff members in the Clinical Psychology Department and Adaptive Behavior Research Project at PSH&TC. Each sorter was to judge the behaviors as to their appropriateness or inappropriateness in the PSH&TC canteen (See Appendix C). The sorters were chosen with diversity of orientation to militate against disciplinary bias. The forced-choice method was employed on the assumption that any so-called neutral behaviors would tend to equally fall into one of the two categories if their choices were forced. Furthermore, it was postulated that so-called neutral behaviors would be

somewhat ambiguous in nature (judged social value) and would therefore fall below the acceptable limits for inclusion in the analysis of the data. Twenty-three items were discarded by this method. Of the 82 items which achieved significance at a .05 level of confidence, using the binomial coefficient statistic for combinations of independent events,⁵⁷ 48 were judged to be appropriate and 34 were judged to be inappropriate.

A frequency count of each of the 82 items was then employed on each of the subjects four OTB data sheets. This operation yielded a worksheet for each student on which were recorded by item number a total of appropriate (A) and inappropriate (I) behaviors for each subject. From these individual data worksheets an aggregate worksheet was compiled from which each student was ranked by both A score and I score (See Appendix F).

For the purpose of this study these data were then considered as scale scores and were labeled as appropriate behavior scale (ABS) and inappropriate behavior scale (IBS).

The TSI protocols were collected and scored by research assistants under the supervision of that technique's principal investigator and author, Mrs. Barbara Edmonson. The range of difference scores for the

⁵⁷Allen L. Edwards, Statistical Methods for the Behavioral Sciences (New York: Rinehart & Company, Inc., 1954), pp. 216-217.

subjects in the present sample was from 77 to 5 with a mean of 39.83 (median 39.5). Error score range was from 2 to 19 with a mean of 9 (median 10.5) (See Appendix D).

Statistical Method

Statistical analysis was accomplished by computing Spearman rho's between subscales of both the TSI and the ABS and IBS derived from observational data, and across subscales of both the techniques. Rho's were also computed for each of the subscales with the subject's most recent full scale score on either the Weschler Intelligence Scale for Children or the Weschler Adult Intelligence Scale.⁵⁸ t tests were employed to check significance levels of the obtained correlations.⁵⁹ t values of 2.228 and 3.169 were necessary in order to accept the correlations at the .05 and .01 probability level respectively.⁶⁰ Five rho's met the requirements for the first test, three of which also fulfilled the requirements of the second test.

These five measures were considered as to their interrelationships, especially in respect to how they appeared to measure similar as well as different aspects of the subjects under study.

⁵⁸Ibid., pp. 193-197.

⁵⁹Ibid., pp. 400-402.

⁶⁰Ibid., p. 501.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of the present study was to explore the feasibility of employing a direct observational technique as one means of assessing manifest coping behavior of mental retardates.

Each of twelve mentally retarded, institutionalized adolescent males of adaptive behavior level upper III was independently observed by two trained observers for a total of four periods of 15 minutes each in the Parsons State Hospital and Training Center canteen during regularly scheduled canteen periods. From the 48 narrative reports, 105 behavioral events were extracted which were independently judged by seven professional staff members of the Clinical Psychology Department and the Adaptive Behavior Research Project at PSH&TC. Eighty-two of the behavioral events achieved inter-judge agreements at the .05 chance occurrence level; 48 appropriate and 34 inappropriate.

A frequency count of these 82 items, differentiated as to appropriate and inappropriate, was then accomplished for each subject's individual OTB's (See Appendix E). Totals of appropriate and inappropriate behavioral events manifested by each subject during his four OTB's were thus obtained and were then considered as scale scores.

Scale scores earned by the subjects on the items judged appropriate were labeled Appropriate Behavior Scale (ABS) and scale scores earned on the items judged inappropriate were labeled Inappropriate Behavior Scale (IBS). Each subject was then ranked on these two scales as well as on earned scores on the TSI and the most recent full scale score achieved on either the WISC or the WAIS--which were labeled W-FS.

Rank correlations were computed for each of the five measures with each of the other four measures. Results of this operation are reported in Table II.

TABLE II
RANK CORRELATION MATRIX

	TSI-Inf Inference Score	TSI Error Score	ABS	IBS	Wechsler Full Scale Score
TSI-I	-				
TSI-E	-.43	-			
ABS	.31	-.66*	-		
IBS	-.71**	.53	-.58*	-	
W-FS	.81**	.01	.42	-.71**	-

* $p < .05$

** $p < .01$

If these five measures are considered as being either indicative of, or a measurement of, positive adaptive value

or potential, or negative adaptive value, the TSI Inference score (TSI-I), the ABS of the observational data, and the Wechsler FS scores could all be considered positive in value. Similarly, the TSI Error score (TSI-E) and the IBS of the observational data would be considered negative in value. A null hypothesis could then be stated: no significant differences would exist between any two measures of each of the then dichotomized groups of scores.

Inspection of the rho matrix reveals this to be untrue, negating this null hypothesis. Overall analysis of directionality shows, with one exception, that all like measures correlate positively within themselves and negatively with the unlike measures. The exception is an insignificant positive relationship ($r'=.01$) between the negative score, TSI-error, and the positive score, Weschler Full Scale.

From an overall inspection of the correlation matrix and, within the limitations of the present study, the following interpretations are offered:

1. Intra-technique measures on both the TSI and the observational data demonstrate a tendency to mutual independence, but to limited degrees. Individually, these four submeasures of the TSI and the observational data seem to be related to different kinds of abilities with the present sample.

2. At the lower reaches of the Weschler FS scores, this instrument appears to be measuring much the same kinds of abilities as the TSI-I scale.

3. With this sample, the IBS of the observational data has approximately equal inverse relationships with both the TSI-I and the W-FS and a positive though insignificant relationship with the TSI-E scale.

4. The IBS also has a significant inverse relationship with the ABS, a measure, which is positively related with the TSI-I as well as the W-FS, but to probabilistically insignificant degrees.

5. The ABS is measuring something insignificantly related to the things measured by the TSI-I and the W-FS but significantly inversely related to those things measured by the TSI-E score.

6. The IBS is measuring a lack of adaptive potential separate from that which is revealed by the TSI-I and W-FS in addition to the lack of positive adaptive potential as measured by the ABS--a measure somewhat separate from the TSI-I and W-FS.

7. The TSI-E scores show no significant relationships with any of the other measures except an inverse one with the ABS of the observational data.

8. With the present sample, concurrent validity to various degrees exists for all measures. The TSI-I, W-FS, and IBS appear to all be measuring the presence or absence

of the same kinds of things while the IBS, in addition, shows a strong inverse relationship with those things measured by the ABS which, in turn, shows low relationships with W-FS and TSI-I, and a high relationship with the TSI-E a measure relatively dependent of both the TSI-I and the W-FS.

9. Although much overlap in measurement of a body of things being measured exists, it appears the IBS, although measuring intelligence, is also measuring those other things being tapped by the ABS and the TSI-E at this level of mental retardation.

As the IBS seems to be yielding a wider sampling of abilities, both those more heavily weighted with measured intelligence and those which are not, the IBS would seem to be the most effective technique of the ones under study and would seem to deserve further attention in later studies. However, it would appear further efforts in developing ABS kinds of measures would be fruitful as this scale seems more apt in measuring "non-IQ" type intelligence.

At this stage of analysis of the data, an attempt to separate the influences of indices of known abilities from the hypothesized ones of the observational data was determined to be an aid to interpretation.

The partial correlation statistic as outlined by Johnson and Jackson⁶¹ was employed with selected measures to this end, with the results reported in Table III.

TABLE III

TABLE OF PARTIAL CORRELATIONS OF SELECTED MEASURES[†]

$r_{21.5} = -.72^*$	$r_{34.1} = -.54$
$r_{23.1} = -.61^*$	$r_{34.2} = -.36$
$r_{23.4} = -.51$	$r_{34.5} = -.44$
$r_{23.5} = -.72^*$	$r_{35.1} = .30$
$r_{24.1} = .35$	$r_{34.15} = -.49$
$r_{24.3} = .24$	$r_{32.45} = -.65^*$
$r_{24.5} = .74^{**}$	$r_{24.15} = .77^{**}$
$r_{41.5} = -.33$	$r_{45.1} = -.33$

[†] To make the figures more wieldy and to facilitate reporting, the measures TSI-I, TSI-E, ABS, IBS, and W-FS were coded 1, 2, 3, 4, and 5 respectively.

* $p < .05$

** $p < .01$

From the table, it can be ascertained that, with these data, the scores derived from the direct observational

⁶¹Palmer O. Johnson and Robert W. B. Jackson, Modern Statistical Methods: Descriptive and Inductive (Chicago: Rand McNally & Co., 1959), pp. 390-394.

technique employed in the present study are measuring abilities which can be observed and recorded. These scores, while not unrelated to the other existing measures under study, are reflecting other kinds of coping resources.

In particular, when the IBS of the observational data, the measure in the present study which seems to sample the different kinds of abilities most widely, has some of the influence of measured intelligence partialled out, its relationships with the other measures become more meaningful, especially in regard to the TSI-E scale, the measure seemingly least affected by measured intelligence with the present subjects. For example, the relationship between TSI-E and IBS is .74 ($p < .01$) when the effects of FS are partialled out. Moreover, when the effects of both W-FS and TSI-I are partialled out, a relationship of .77 emerges ($p < .01$) between IBS and TSI-E.

Also, the relationship between the ABS and the TSI-E becomes more meaningful when the effects of both the IBS and the W-FS are partialled out. This inverse relationship of .65 is significant at .05 level of confidence.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study's avowed purpose was to explore the feasibility of employing a direct observational technique as one means of assessing the manifest coping behavior of mental retardates.

A review of the literature disclosed that mental retardates obviously have abilities and capacities (skills and coping resources) far beyond those capabilities reflected by their measured intelligence scores, and are able to adapt to community standards for acceptable behavior and, therefore, remain invisible in the community. Many retardates, however, fail on their job placements as well as in the social community, as a result of their varying abilities to adjust to the environment, exclusive of their abilities to adequately perform necessary employment skills.

The literature also revealed that many have advocated the more extensive use of direct observation in the study of behavior, and, in the field of mental retardation, that the need exists for better assessment techniques. This is especially true in the assessment of the symptomatic behavior of adolescent and older retardates. Classification schemes and measures which consider, in addition to scholastic aptitudes, the kinds of non-IQ intelligence related to social adaptability, or the ability to achieve

social acceptance, are needed. These schemes should consider the facets of coping resources related to the learning and acceptable utilization of certain social cues, and relate their indices to judgments currently being made as to Adaptive Behavior classification within institutions, as well as to the judgments being pronounced by society.

Assessment techniques presently in use usually confine their approach either to younger age groups or are concerned mainly with assessment of the retardate's ability to function independently in the areas of self-care and related skills. The assessment of what might be termed social effectiveness, or the ability of the retardate to cope with the socially imposed demands of his environment, has generally been neglected.

The present study was undertaken with the assumption that the characteristics retardates manifest that incur the unfavorable attention of society are discernible by trained observers and are capable of being measured in some manner, and are, therefore, amenable to study by direct observational techniques. It is felt that the direct observational technique presently under exploratory investigation, once developed and appropriately modified to account for setting-specific behaviors could eventually be evolved into a kind of checklist with which the various persons who work with mental retardates could evaluate their charges' symptomatic behavior and implement plans

of action to ameliorate those kinds of behavior which could be judged to have deleterious effects on overall social adjustment. These behaviors have a precluding effect on adjustment by either or both bringing excessive stress in the form of unfavorable attention to the individual thus making him overly visible; and, in some cases, actually precluding or supplanting other more adaptive behaviors, that is, the more effective coping resources.

It was noted that behavioral scientists employ the technique of direct observation to gain information in many ways, but usually the setting in which the subjects are observed is structured to various degrees to elicit classes of behavior in response to certain kinds of stimuli. Given kinds of questions are asked which narrow the subjects' response class, or the milieu is manipulated to test how a subject reacts within the limitations imposed by those manipulations.

While it is realized that not all behavior can be observed and recorded by direct observational techniques, it is considered a function of the present state of precision of these direct observational techniques, and not inherent in the method. With perfected methods of observation and more experienced observers, it is felt that all meaningful behavior of a subject could be observed and reported. But first, an attempt must be made to define behaviors as discretely as possible, while not neglecting

their contextual elements, and not assigning any values to observed behaviors until all data are received. It will, no doubt, eventually be determined that not all behavior is meaningful, but judgments as to what kinds of behavior are meaningful should be reserved until enough is known to allow judgments to be made.

As it was the purpose of this study to add to the body of knowledge concerning the assessment of manifest coping behavior of mental retardates by a direct observational technique, specifically, and to the assessment of symptomatic behavior in general, it is felt the obtained data have partially fulfilled the requirements of this avowed intent.

Examination of the five indices considered in the present study indicates that something new in the assessing of adaptive potential or coping resources has emerged from the use of direct observation, and is a part of the value of the study. Directionality of the obtained correlations of intra- and inter-technique measures are the expected, although interpretations are vulnerable to types I and II errors in several instances.

The measures of positive adaptive value, TSI-I, ABS, Wechsler FS, all correlated positively. The measures of negative adaptive value, TSI-E and IBS also correlated positively. And, with the exception of one nonsignificant positive relationship, all the measures of positive adaptive value correlated negatively with measures of negative

adaptive value. The overall set of interrelationships of these five measures gave rise to certain speculations as to what kinds of abilities were being sampled by the observational technique separate from those measured by the other techniques; in particular, the body of abilities which seemed to be both related to, and separate from, the concept of measured intelligence was of interest.

The partial correlation statistic was employed to separate the influences of the indices of the known abilities from the hypothesized ones derived from the observational data.

The partial correlations indicated that when the effects of measured intelligence are partialled out, the inverse relationship of the TSI-E and TSI-I is increased to .72 ($p < .05$). The inverse relationship of the TSI-E and the ABS is increased to .61 ($p < .05$) when the effects of the TSI-I are partialled out. The inverse relationship between TSI-E and the ABS is increased to .72 ($p < .05$) when the effects of measured intelligence are partialled out. And, when the IBS of the observational data has the effects of measured intelligence partialled out, its relationship with the TSI-E scale is increased to .74 ($p < .01$). When the effects of both measured intelligence and the TSI-I are partialled out, the relationship between the IBS and the TSI-E is increased to .77 ($p < .01$).

These patterns of overlap in measurement of the total body of abilities being sampled by these five indices lead to certain conjectures regarding the nature of how this body of abilities is being sampled. The findings of the present study suggest the two measures of negative adaptive value (TSI and IBS) are sampling, in somewhat different directions, the misutilization of social cues by these subjects--the IBS in opposition to measured intelligence, and the TSI-E unrelated to it. The results of this study lend support to the hypothesis that coping resources of retardates are discernible through direct observation, and are meaningful in terms of their relationships to other indices of known and theorized dimensions of coping resources. Both scales derived from the observational data show significant relationships with the other measures to various degrees, both demonstrating measures of concurrent validity.

Finally, these data indicate by their interrelationships that both the ABS and IBS derived from the observational data are securing meaningful information for the symptomatic classification of behavior. The present technique does sample the utilization and misutilization of social cues by means of direct observation and the results can be favorably compared with other more objective measures. Moreover, the present direct observational technique can be employed to record and measure adaptive behavior when the

use of other, more structured techniques would be impractical.

Although few, if any, conclusions can be drawn from the results of the current study, certain thoughts were spawned from the rather copious amount of data, which are held to be important as guidelines for future investigations. It is felt the present study fell short of evolving what might be termed discrete indices of positive adaptive value and negative adaptive value due to an inadequate definition of these goals at the time the extracted behavioral events were presented to the seven judges for sorting. The concept of negative visibility was not noted in the instructions to the sorters and therefore was not considered as such in their decisions. The sorters should have been requested to consider, and judge, whether any behavior might be expected to incur a reaction from others with negative overtones. Was the visibility gained positive or negative in relation to that individual's position in the group in that setting?

It would also seem quite necessary when interpreting any findings of the present study to consider the limitations imposed by the milieu of the institutional canteen. Even though the canteen setting is relatively unstructured, it is still a part of the total institutional milieu, and would have been regarded as such by the subjects during the study. This would seem to impose a great limitation

on the ability to generalize the present findings to other subjects functioning in a milieu where these kinds of institutional trappings would be absent. The subjects in the current study were habituated, so to speak, to structure: institutional regimen had become a way of life to them and the concomitant feelings and perceptions could not be discarded totally by those so habituated when they entered a setting, still within the institution, which allowed a great deal of freedom to their behavior. These habitual perceptual sets could not totally be discarded for those relatively brief periods of time. It is suggested that future investigators attempt to investigate by direct observation the unmanipulated behavior of noninstitutionalized retardates for comparative purposes.

Another fruitful area for future study would seem to be an examination of patterns of interpersonal interaction. This goal could be defined before the data were collected in terms of the kinds of interactions a subject attempts and received, with whom, and to what degrees of success. As an axillary to this approach, a kind of popularity index might be evolved from the number of mutually acceptable interpersonal interactions observed.

It is also advocated that future investigators urge their observers to continue to include description of contextual elements in their recording of observations.

While it is acknowledged that not all emotional overtones and motivational undertones of behavior can be discerned and recorded by the observer, a systematic attempt imparts additional richness to the data otherwise lost. These judgments, impressions, and feelings, however, should be labeled as such, to allow their being considered or discounted as supplemental aids in later interpretation. In no instance would they be allowed to supplant the more objective observations.

In the final analysis, it is felt that the productivity of the present study would seem to be its proof that such research has value and that this method of approach is a legitimate one with which to study the behavior of mental retardates. It is felt this study has demonstrated the worth of studying unmanipulated behavior, occurring in an unmanipulated setting, although it failed, partly for reasons noted, to establish any definitive indices to assess behavior. It is proposed that subsequent investigations widen the application of direct observational techniques to other settings, using mental retardates as subjects, and attempt to determine ways of refining these techniques into more usable forms.

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APPENDICES

APPENDIX A

PARSONS STATE HOSPITAL AND TRAINING CENTER

DEFINITIONS OF GENERAL ADAPTIVE BEHAVIOR LEVELS⁶²

Level -I

Description:

Individuals of this level are capable of effective social and economic functioning in a low-demand competitive environment, but need some support and supervision in the management of their personal affairs.

Treatment and Training Objectives:

The objectives are to ensure that each person acquires, to the limit of his ability, those understandings, attitudes, and behaviors which will enable him to develop adequate self-concept, self-help and self-care skills, interpersonal relationships, personal responsibility, economic functioning, social and civic responsibility.

Level -II

Description:

Individuals of this level are capable of effective social and economic functioning in a partially competitive

⁶²Henry Leland, "Some Modifications in the Use of Adaptive Behavior Definitions," Project News, Parsons State Hospital and Training Center, Kans., I, December, 1965, 1-5.

APPENDIX A (cont'd.)

environment, but need some continuing support and supervision in the management of their personal affairs.

Treatment and Training Objectives:

The objectives are to ensure that each person acquires, to the limit of his ability, those understandings, attitudes, and behaviors which will enable him to develop adequate self-concept, self-help, and self-care skills, interpersonal relationships, personal responsibility, economic functioning, and limited social responsibility.

Level -IIIDescription:

Individuals of this level are capable of limited social and economic functioning in a noncompetitive or sheltered environment, but are dependent upon some general control and support.

Treatment and Training Objectives:

The objectives are to ensure that each person acquires, to the limit of his ability, those understandings, attitudes, and behaviors which will enable him to develop adequate self-concept, self-help and self-care skills, interpersonal relationships, personal responsibility, and limited economic functioning.

APPENDIX A (cont'd.)

Level -IVDescription:

Individuals of this level are capable of responding to the simplest of environmental stimuli and interpersonal relationships, but are dependent upon nursing supervision for their maintenance and help in following the routines of daily living.

Treatment and Training Objectives:

The objectives are to ensure that each person develops, to the limit of his ability, those attitudes and behaviors which will enable him to develop adequate self-concept, self-help and self-care skills, and limited interpersonal relationships.

Level -VDescription:

Individuals of this level are the grossly physically handicapped, or those who function in that manner, and who require continuous medical-nursing care for their survival.

Treatment and Training Objectives:

The objectives are to ensure that each person acquires, to the limit of his ability, those behaviors which will enable him to develop such self-concept and self-help, and self-care skills as he is capable of developing.

APPENDIX B

OBSERVED BEHAVIORAL EVENTS

- ** 1. Subject loiters around the counter.
- 2. Subject sings along with jukebox music.
- ** 3. Subject makes body movements to the music off the dance floor.
- * 4. Subject tablehops, greeting peers.
- 5. Subject just browses or wanders about the room.
- ** 6. Subject picks his teeth with his finger or fingernail.
- * 7. Subject presents himself to a group where he is seemingly ignored.
- * 8. Subject asks girl to dance, accepted and they dance.
- 9. Subject holds hands with a female peer on top of the table.
- ** 10. Subject wanders around from place to place seemingly aimlessly.
- 11. Subject makes an attempt to peer at the observer's clipboard.
- ** 12. Subject makes emphatic comments to a peer (almost outbursts).
- * 13. Subject gestures to female peer from a distance to get her to dance, they do.
- * 14. Subject moves to and fro, that is, toward and away from a group of peers, never getting out of conversational range, and finally leaves the area after about eight friendly interchanges with them.
- 15. Subject laughs at overheard comments of others while not necessarily a member of that group.
- 16. Subject places hands on other persons to gain their attention or to emphasize a point.

17. Subject leans forearms and/or elbows on table.
- * 18. Subject slaps table, as for emphasis.
- * 19. Subject leans back in chair.
- * 20. Subject engages in playful banter with counter clerk.
- ** 21. Subject chews on his fingers.
- * 22. Subject is engaged in give and take conversation.
- ** 23. Subject manipulates in a nervous manner (like twisting shirt buttons between his fingers).
- ** 24. Subject repeatedly attempts interaction with a peer who seems disinterested.
- ** 25. Subject involved in "discotheque dancing" with a male peer (initiated by subject).
- * 26. Subject engages in affectionate, and/or friendly, touching of another.
- * 27. Subject wearily waits his turn at counter.
- * 28. Subject gestures or points with his hand.
- ** 29. Subject eats a confection like popcorn in the presence of others without offering any.
- * 30. Subject empties ashtray or the like.
- * 31. Subject returns empty soda bottle to counter.
- * 32. Subject thanks waitress for purchase.
- * 33. Subject is involved in nondescript social activity of seemingly acceptable behaviors.
- ** 34. Subject speaks sharply to a peer and looks annoyed.
35. Subject slaps female peer on shoulder, saying, "Let's dance."
- ** 36. Subject asks girl to dance, accepted, but they do not dance.
- ** 37. Subject wanders among tables of peers without speaking to any.

- ** 38. Subject interrupts peer to get canteen manager's attention and service.
- 39. Subject comments to peers apparently having fun among themselves--ignored.
- ** 40. Subject softly calls to canteen manager and beckons with his finger--ignored.
- * 41. Subject initiates seemingly mutually enjoyable teasing activity.
- ** 42. Subject punches diagonal grabs at peer as if to gain attention--ignored.
- ** 43. Subject punches diagonal grabs at peer as if to gain attention--attention gained.
- * 44. Subject stands by jukebox, alone, looking around.
- * 45. Subject approaches a table of peers, stands and smiles, but does not join group for a time.
- * 46. Subject takes just vacated seat of a peer.
- 47. Subject expressionlessly brushes aside peer's playful pinches.
- ** 48. Subject poses himself next to a group of peers, no speech, subject displays object--ignored--finally sits, without invitation.
- * 49. Subject displays a bit of information to an aide, who then seems to become interested.
- ** 50. Subject inflates and explodes a paper bag.
- ** 51. Subject follows a female peer around, stands close by her, but does not speak or make any overtures to her--she ignores him.
- ** 52. Subject eats popcorn directly from bag with mouth.
- ** 53. Subject presents himself at counter, but makes no move to buy anything. Leaves momentarily.
- ** 54. Subject sits down at table, but does not attempt to establish any interaction with the peers already seated there.
- ** 55. Subject joined at table by peer--neither initiates interaction.

- * 56. Subject speaks briefly to peer, is answered, both laugh (shared joke).
- * 57. Subject leaves table where girl friend is seated, roves around for a time, talking to others, then rejoins table.
- ** 58. Subject, while not too involved in ongoing peer activity, displays and manipulates object in a seemingly attention-gaining manner.
- 59. Subject manipulates and plays with cigarette for a considerable time without lighting it.
- ** 60. In the company of his girlfriend, the subject is silent for a time, and then puts his head on the table. She leaves.
- 61. Subject emits loud exclamation of "I will," in response to remark by peer.
- * 62. Subject approaches two female peers, talks to one, and then together the subject and one peer leave.
- 63. Subject lights lighter, watches the flame, and then replaces to pocket (no purpose discernable).
- 64. Subject mumbles and laughs about something in presence of peer--not heard, or ignored by the peer.
- * 65. Subject moves with and as part of a group to a table.
- * 66. Subject displays an object in which a group of peers becomes interested.
- ** 67. Subject argues with counter clerk over price of confection.
- * 68. Subject involved in observable interaction with 1-2 peers during observational period.
- * 69. Subject gives greeting to observer.
- * 70. Subject returns greeting.
- 71. Subject tablehopping without attempting interaction with peers at the table.
- ** 72. Subject fails to return greeting.

- * 73. Subject responds to a display of an object by a peer.
- ** 74. Subject "cuffs" with peers.
- ** 75. Subject sporadically walks with a pronounced limp.
- ** 76. Subject commands the canteen clerk to open his bottle of soda as he "can't open it with his teeth." (Command is issued at time of initial ordering of the soda.)
- * 77. Subject leads or directs game type activity with peers.
- * 78. Subject leads or directs conversation with peers.
- 79. Subject makes greeting to a peer (for example, "Hi, Gramma," etc.) and recipient either ignores it or appears to be annoyed.
- * 80. Subject joins group of peers where he is seemingly well-accepted.
- 81. Subject playfully tousles the hair of a peer.
- * 82. Subject physically introduces himself to an individual--he is ignored.
- * 83. Subject makes greeting (that is returned)--acknowledged.
- * 84. Subject makes greeting that is not returned.
- * 85. Subject presenting himself to a group on a strictly passive nonparticipating level (an onlooker).
- ** 86. Subject grabs girl by the arm.
- 87. Subject precedes girl, returning from dance floor, to table.
- 88. Subject leans or "hangs" on counter.
- * 89. Subject fetches a peer to introduce to another peer--subject's sister.
- * 90. Subject requests light for a cigarette from a peer--granted.
- 91. Subject introduces himself into a group where he is ignored.

- * 92. Subject goes to table of peers, leaves and goes to get girl, leads her to that table where all join in conversation.
- * 93. Subject jokes with peer at adjacent table in response to her display of a soda bottle with frozen contents. She joins subject's table.
- ** 94. Subject dances alone (body movements with music) on the dance floor.
- 95. Subject speaks to and taps arm of a nearby peer. She recoils from his touch and makes no verbal response. Subject then turns away and makes no further overtures.
- * 96. Subject tried to gain entry into a small group of peers by joining in their ongoing conversation--rejected, i.e., he is ignored by the participants.
- 97. Subject calls teasing-type comment to peer about twelve feet away--ignored.
- * 98. Subject "explains" a toy to a peer, the latter got from a Cracker Jack box--peer seemed neither to solicit nor to be antagonized by subject's intervention.
- * 99. Subject twice exclaims, "I overflowed it, man," to a peer after overfilling his lighter.
- * 100. Subject involved in observable interaction with 3-4 peers during observational period.
- * 101. Subject abruptly leaves table of peers--they follow him to the jukebox.
- 102. Subject involved in observable interaction with no peers during observational period.
- * 103. Subject involved in observable interaction with 5-6 peers during observational period.
- * 104. Subject involved in observable interaction with seven or more peers during observational period.
- ** 105. Subject engages in much display of a cigar, or like article.
- * Judged appropriate (with p equal to or less than .05)
- ** Judged inappropriate (with p equal to or less than .05)

APPENDIX C

INSTRUCTIONS TO SORTERS

These are behaviors of institutionalized males, ages 16-21, which were observed by two trained observers in the Parsons State Hospital and Training Center canteen during regularly scheduled periods.

Place a card into the box marked APPROPRIATE if you consider the behavior appropriate for a subject in this setting. Place a card into the box marked INAPPROPRIATE if you consider the behavior inappropriate for a subject in this setting.

After sorting all the cards, please return the boxes to Berniece Long in the Adaptive Behavior Department.

Thank you for your cooperation.

APPENDIX D

SCORES EARNED ON THE TSI

<u>Subject</u>	<u>Inference (TSI-I)</u>		<u>Error (TSI-E)</u>	
	<u>Score</u>	<u>Rank</u>	<u>Score</u>	<u>Rank</u>
1	44	5	2	12
2	58	3	4	10
3	22	10	13	2
4	18	11	19	1
5	75	2	3	11
6	40	6	12	3.5
7	5	12	10	7
8	77	1	11	5.5
9	49	4	11	5.5
10	39	7	12	3.5
11	25	9	5	9
12	26	8	6	8

APPENDIX E

APPROPRIATE BEHAVIOR SCORES EARNED BY PERIODS

Observational Time Block						
	1	2	3	4	Sum	
S U B J E C T	1	16	5	15	6	42
	2	8	12	6	14	40
	3	7	7	15	8	37
	4	8	7	7	6	28
	5	11	10	12	8	41
	6	7	6	4	5	22
	7	5	8	2	5	20
	8	13	6	7	12	38
	9	10	9	5	5	29
	10	5	5	14	8	32
	11	14	10	9	11	44
	12	14	11	7	11	43

APPENDIX E (cont'd.)

INAPPROPRIATE BEHAVIOR SCORES EARNED BY PERIODS

		Observational Time Block				
		1	2	3	4	Sum
SUBJECT	1	3	2	0	2	7
	2	0	0	3	0	3
	3	2	2	0	4	8
	4	1	4	3	4	12
	5	1	0	1	0	2
	6	1	2	5	2	10
	7	2	1	1	5	9
	8	0	0	1	1	2
	9	3	0	0	3	6
	10	0	3	0	1	4
	11	2	1	0	1	4
	12	0	2	1	2	5

APPENDIX F

OBSERVATIONAL DATA AGGREGATE SCORES

<u>Subject</u>	<u>Appropriate (ABS)</u>		<u>Inappropriate (IBS)</u>	
	<u>Score</u>	<u>Rank</u>	<u>Score</u>	<u>Rank</u>
1	42	3	7	5
2	40	5	3	10
3	37	7	8	4
4	28	10	12	1
5	41	4	2	11.5
6	22	11	10	2
7	20	12	9	3
8	38	6	2	11.5
9	29	9	6	6
10	32	8	4	8.5
11	44	1	4	8.5
12	43	2	5	7

APPENDIX G

WECHSLER FULL SCALE SCORES

<u>Subject</u>	<u>Score</u>	<u>Rank</u>
1	63	3.5
2	56	6
3	53	9
4	46	12
5	66	2
6	55	7
7	50	11
8	68	1
9	54	8
10	63	3.5
11	51	10
12	59	5

APPENDIX H

SAMPLE OBSERVATIONAL TIME BLOCK

OTB: 38

S# 3

Subject stands by table where two female peers are seated. Now talks with one of them. They (Subject and female peer) leave that table and move to vacant table. Sit by themselves, talking for a time. Female peer at another table calls to Subject's "girl." She goes over to the other table leaving Subject alone. He calls to her and she starts back in his direction, but passes by without a word and goes to the jukebox. Subject gets up and follows her. Not interacting, but appear to be just watching the dancers. After music stops, they sit alone at a table. Conversation now, several interchanges. Silence for a time. Subject puts his head down on the table as if tired. Female peer gets up and leaves. Subject stays for a time, then goes to an empty table, stands there, then follows his "girl" who is now walking near the jukebox. He follows and stands close by, does not speak to her. She wanders, he follows. Music starts while Subject is on dance floor. He dances with no one in particular. On and on. Music stops. Subject goes to table of three peers, leaves and goes to get girl, leads her to that table. All talk there. Subject blows up and bangs a paper bag. Leaves the table and heads for the jukebox. Subject's "girl" and another couple follow him.

APPENDIX H (cont'd.)

Scoring:

A	I
<u>22</u>	<u>50</u>
22	51
22	60
62	94
80	
92	
100	
<u>101</u>	
8	<u>4</u>

APPENDIX I

MANUAL: A TEST OF SOCIAL INFERENCE

Part I

Experimental Edition

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Developed as one part of a research and demonstration project supported jointly by the Childrens' Rehabilitation Unit, University of Kansas Medical Center, Kansas City, Kansas, and the Vocational Rehabilitation Administration, U. S. Department of Health, Education and Welfare, under Grant RD-1388-P

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Barbara Edmonson and Henry Leland

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TEST OF SOCIAL INFERENCE (135)

"...The impressions man's senses give him are cryptograms in the sense that they have no meaning unless and until they become functionally related to man's purposive activities. The world man creates for himself through... 'the rabble of the senses' is one that takes on a degree of order, system, and meaning as man builds up through tested experience a pattern of assumptions and expectancies on which he can base action.

.....

"Man's actions cannot be effective unless and until he builds up an assumptive...world that has some degree of constancy and verifiability...

"One's capacity to meet and adjust to others' purposes is dependent upon one's ability to understand those purposes..."
(Cantril, et al, 1952)

Introduction

By "social inference" is meant the interpretation of visual cues which indicate human purpose, attitudes, and probabilities of action within a situation. Analogous to the skill more systematically taught and tested in schools under the heading of "reading comprehension," in part, social perception and inference consists of selective attention to cues, and, in part, an accurate assessment of their implications. Just as one gradually learns to discriminate letters and their combinations and can conceptualize what the words denote, so, little by little, one learns the cues and cue configurations in the world around and to conceptualize their meanings. It is to explore the differences with which one and another person performs this function and in particular as a means of measuring the social situation comprehension of retarded youth in comparison with the non retarded that this instrument has been developed.

Test Description

The test consists of verbal responses to examiner questions concerning 35 pictures. The test must be individually administered. Sessions may run from twenty to forty-five minutes.

The test pictures depict a variety of social situations taking place in diverse social settings. The scenes range in difficulty from some, simple enough to be comprehensible to adolescents who are severely retarded, to others of sufficient complexity to challenge the inferential ability of non retarded adults. During the process of test development, pictures were selected for use as test items if interpretable by eighth and ninth graders of average intelligence, and interpretable equally well by pupils of both sexes.¹ The responses of the non retarded pupils became a base for the evaluation of retardate response. Although pictures were selected for their non ambiguity, their interpretation may call for a fund of experiential information that a particular subject may not possess.

¹ The source of a nuclear group of pictures was a pool of items that had been assembled by the senior author for pilot investigations of retardate perceptual accuracy. These earlier studies indicated that the retarded adolescent although literally accurate in his reports of visual material, unlike the nonretarded subject of similar age, would often fail to get the point. For the test development, therefore, the pictures that "had a point," and that required at least two inferences for full comprehension, were winnowed from the rest. Additional items meeting these criteria were the fruit of systematic search. With the assistance of the collection department of Goodwill Industries, thousands of copies of popular picture magazines were secured. Among them were American Home, Boy's Life, Ebony, The Farm Journal, Glamour, Ladies Home Journal, McCall's, Playboy, Presbyterian Life, Scouting, True Romance, and many others. All of these and virtually complete files of back issues, for at least ten years, of Life, Look and Saturday Evening Post were examined. The apparently non ambiguous, inference-requiring, yield from these sources was then tried out on groups of retarded and non retarded subjects, in conjunction with variations of questions and methods of response-recording. The 35 pictures finally selected, as indicated above, represents a wide range of situations, a range of difficulty, and are well understood by the average non retarded junior high student.

To establish the nature of the task, accompanying the presentation one at a time of the first 16 and the last two pictures, the examiner asks for specific inferences (e.g., "Who is she?" "How does she feel?" "Where is he?" "What is he doing?" "Why is he doing it this way?" etc.) Then, with respect to the first two pictures, by asking "What gives you that impression?" the examiner attempts to focus attention on the relevant cues. Later pictures, with the exception of items 34 and 35, are accompanied by questions less convergent upon desirable responses (e.g., "Look at this carefully and tell me about it") so as to be more revealing of a subject's ability to arrive at appropriate inferences with less assistance. A discussion of the recording form, response classifications, and scoring, will be found in sections that follow the section immediately below.

Test Administration

Prior to experimental use of the test, the examiner should carefully familiarize himself with the test administration procedures. He should be supervised in the administration of a half dozen practice tests by an experienced tester and should score the tests using the Scoring Guide (Edmonson, Havens & Carrell, 1966). It is advisable to compare tape recordings of these practice administrations both with what the examiner has recorded on the recording forms and with the standard protocol of questions and procedures. Practice use of the Scoring Guide will facilitate classification of responses at the time of testing, and, to some extent, prepare the examiner for the range of answers he may receive.

Testing should be conducted in a well lighted room in which there are no distractions.

Questions should be asked verbatim as indicated on the recording form. All material in one set of quotes should be asked at the same time. If the subject appears uncertain of what was asked, questions may be repeated, verbatim. Some questions are only asked if a subject gives a specific response. For example, with respect to Picture 1, (Space Car) if the response to "Where have they been?" is "Space," "Mars," etc., then ask "What were they doing?" If the initial response was something other than "Space," the second question is omitted.

The examiner must be careful not to reveal the adequacy or inadequacy of the subject's response by his own facial or vocal cues. It is important that the examiner seat the subject beside him and not opposite him at a table. The examiner should have his recording form on a clipboard or similar hard surface so that he can tilt his board to conceal what he is recording and sit outside the subject's peripheral vision.

The examiner must be careful to pace questions so as to give the subject time to answer each question as well as he is able. The examiner hands each picture in turn to the subject to hold, in order, both to assure the subject's having a good view of the picture and to give him control over the length of his response. The subject is to indicate that he has finished by placing the picture face down on the table in front of himself.

Probes should be used as indicated by the protocol. (Note reference to probing at the conclusion of the Recording section.) While administration standardization is necessary to assure score reliability, it is important to have a record of what the subject understands in response to the standard stimuli. If examiner is not sure he understood what the subject said, he asks for repetition: "I didn't hear that," "Please say it again; I didn't

5

understand." If the response is ambiguous, the examiner may attempt to clarify the respondent's intent so long as his further question is not a "leading" question. The direct question "Who..?", however, is used to clarify the ambiguous response "Someone..." in connection with the practice picture and with pictures 2 and 8. The ambiguous responses to picture 33 "A jet spelled Sue" or "An airplane wrote Sue," similarly require clarification, because, to receive full credit, responses to these pictures must indicate the subject's awareness that human agency was responsible. The appropriate probe, as indicated in the recording form, is "How did it happen?"

In any situation in which a subject seems timid, suspicious, fatigued, etc., the examiner should attempt to create a situation in which the subject is less timid, less suspicious or less fatigued. After a preliminary effort at rapport, however, instructions to subject should closely follow the instructions as they are given below. If the examiner has reason to doubt that a subject's responses are representative of his capacity, his observations should be written on the face of the recording form.

Instructions for Initial Administration:

Hello -!

Would you please sit here. /Indicating a chair beside the examiner/

I have some pictures and I would like you to answer some questions about them.

/Give practice picture to subject. Allow him to look at it before asking anything./

For example, look at this picture. What is happening, etc.../Read questions in sequence from the recording form and underline or write in

the answers being careful to underline material only if it truly matches a portion of a response. Additional portions of the response, or responses that differ in some way from the printed material, should be carefully written on the protocol²/

/With respect to the practice picture, to clarify the task for a subject who is not performing as expected, the examiner may show the subject the cues, and tell him what they mean./

That is the sort of thing I'd like you to do. Some pictures will have more questions than others. There are many different good answers and this hasn't anything to do with your school work.

When you are through, put the picture down on the table in front of you. Then I know you are finished.

/Hand each succeeding picture to the subject and give him a chance to look at it before asking the first question./

Now here is the first picture.

Etc.

/After each picture and only after picture has been laid down/ All right.

/No break or idle conversation, but this is subordinate to the statement about rapport/

/At the end/ Thank you very much for your help. Good bye.

/In case of noted fatigue or distraction: "Would you like a 7th inning stretch?" "Would you like to get a drink of water?" "Would you like the window opened?"

Instructions for a Retest Administration:

/Follow instructions used in initial testing. In the case of subject's remarking or questioning a second exposure to the test, examiner smiles and replies: "Yes, we need you to help us again."/

/In the event subject probes further, "Well why again?" answer with a smile, "Sometimes we have to do things more than once."/

/If subject asks, "Didn't I do it all right before?" answer with a smile "You did fine, but sometimes we have to do things more than once... there are a lot of different good answers."/

Recording

The recording form, in addition to listing the standard questions and probes pertinent to each picture, contains columns and boxes for the notation of responses of several types. Printed examples of good inferences are listed in the column headed "Scorable Answers." If a subject gives any of these in response to the examiner's question, they are encircled or underlined on the form. If the wording is different or if some additional good response is given, the examiner writes it in.

If, instead of inferences, enumerative or descriptive responses are given, the examiner writes them in the "Non-Scorable Answer" column. If a subject gives much enumeration, the examiner may indicate this by writing "enum." in the Nonscore column rather than writing in each of the remarks. Until an examiner is extremely proficient at response classification, however, he should very carefully record all responses for comparison with the examples given in the Scoring Guide.

If inferences are given which are not correct, or appear questionable, they are written in the column headed "Errors."

Responses to the less specific questions "What is happening here?" "What is this about?" are recorded by underlining the wording of the examples printed on the form or by writing in a box provided for that purpose any differently worded responses, or additional portions of a subject's response, exactly as stated.

A response, one portion of which consists of a good inference, followed by a poor inference or enumerative response which makes the examiner uncertain that the subject really did comprehend the cues, should be probed with "Which would it be, ...or...?" The answer to that probe would indicate its category. The rejected response is crossed out so it will not be given credit.

Response Classification

Responses are assigned to one of three major classifications for scoring: (1) Scorable inferences (Inf), of which there are two subtypes, "good inferences," and the ambiguous incomplete, or insufficiently specific; (2) non-score responses, and (3) errors (E).

An inference is an inductive leap from cues visible in the pictures to what they most reasonably imply. Inference is, in part, the process of classification (Bruner, 1956, 14; 1958, 680ff) as when one identifies something by use of criterial attributes. An example of a response that contains two good inferences is "He is a PFC in the Army/ Marines/ etc." to Picture 28 which shows a man's jacket, with a chevron on one sleeve, hanging on the back of a chair. In this instance a very small detail yields information about the person which clinches identification and eliminates other possible hypotheses that could be generated by other items in the room, by the man's posture and his facial expression. The response "He's home on leave" contains

two additional good inferences that are supported by the uniform jacket, a furlough bag, the room furnishings, and the man's posture and expression. Interpretation of the test pictures thus requires that inferences, supported by visible cues, or at least not contradicted by them, be joined together in a way that is probable. Certain inferential statements with respect to a test picture are more relevant to overall comprehension than others. Typically these are most often included in the responses of non retarded subjects. It is these substantiated and most relevant inferences that we term good inferences, to which full test score credit is assigned.

Inferences which suggest comprehension of centrality, but which are ambiguous, incomplete, or vague, receive partial credit. An example is the response "He's lying on his bed like he used to." The subject who makes this response appears to interpret the man's expression and posture in relation to room furnishings, but there is no indication of any inference with respect to where the man has been.³

Nonscore responses include inferences as to irrelevant portions of a scene, low level inferences that fail to differentiate the less well performing subjects from the better, or inferences which are less probable. An example of an irrelevant inference is the response "He's hot" of the man delivering the washing machine in Picture 35, or the inference "They are going fast" of the girls in the convertible in Picture 31. These receive no credit since they are peripheral to the point of the activity of the scene, and indicates little understanding of what is going on. An example of a

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As further example of ambiguous or incomplete inference, the response to picture 17 "Running in to see someone" receives half credit. In contrast, "Running in to see grandma/ relatives/ friends" is an acceptable full credit inference, while "Running in to a motel/ hotel/ airport, etc." would be scored as an error.

low level inference is the response to Picture 28 "He's comfortable" (in differentiation from the good inference "He's glad to be back.") An example of a less probable inference, because poorly substantiated by cues, is the response to Picture 28 "He's dreaming of his girl."

In addition to the above examples of nonscore inferences, any descriptive or enumerative reply is a nonscore response. Description or enumeration is the reporting of what is concretely visible in lieu of making the jump from cue to implication. As an example, some subjects, when asked to tell what they can about the man in Picture 28 report "He's lying down; has a dog; has a radio, books, etc..." which is a description or a partial inventory of what is there.

Errors are of several kinds: They are sometimes perceptual, but, more often, conceptual. If a subject appears to misperceive certain items, his visual acuity or his figure-ground perception may be at fault; as an example, the response to Picture 9 "The boy is holding on to the truck." Most errors, however, will be misinferences.

Even though cues may be misinterpreted because of a young or a retarded subject's limited experience, his wrong inference is an error and, if it markedly diverges from 8th and 9th grader responses, is so scored. As an example, Picture 2 (an athletic shoe) has elicited (usually from retarded subjects) such responses as "tennis" and "golf." The subjects were unfamiliar with sport shoes; nevertheless, this shoe is shown by visible cues that are recognizable by most nonretarded adolescents to be not tennis and not golf; hence such responses are scored as errors.⁴

⁴ In this instance, 24 subjects of a random sample of 30 nonretarded 8th and 9th graders made the expected identification of "track," "Baseball" or "football" shoe. Three additional subjects replied with the vague nonscore responses "boy's shoe" or "dirty shoe." The remaining three subjects replied with the errors "girl's shoe," "ordinary oxford," "skating shoe."

An effort is made to differentiate the subject's social conceptual discrimination, which may be good, from the form in which he expresses it, which may be poor. For this reason, some responses that are not literally correct are at times given credit as a good inference. As an example, the response to Picture 30 "He might be the new guy after Krushev quit" is literally incorrect, as is indicated by Moslem clothing and architectural details. However, the response indicates that the subject conceptualizes the central figure as an incoming political leader; hence the response is credited. The response earns additional credit for identification of the setting as foreign.

Some responses might be termed erroneous over-generalizations from a particular cue; or failure to consider overriding cue information; or failure to add together cue information from several portions of the picture (in terms of Solley's and Murphy's model (1960) perhaps a breakdown in the perceptual-inferential process at the point of "trial and check.") In such cases an isolated cue might lead to the given inference, among others, but in the logical context of additional relevant cues in the picture, the given inference becomes a poor bet; or at times quite erroneous. As an example, in the practice picture, the mother's expression has led some retarded subjects to say that she feels scared or frightened, but this fails to consider that the snowman is her stimulus object and that an adult would not be frightened by a snowman. This is, therefore, an error.⁵

Erroneous over generalization may involve a chain of inaccurate inferences. As an example, with respect to Picture 7, if a subject reports the

⁵ As further examples, subjects who say the boy in Picture 5 is reading by flashlight "...because the power went out" have failed to include the cue testimony of the covering sheet. Subjects who say of Picture 11 that the tourists are newspaper people, base their inference upon the cameras only, and overlook the clothing, the mixed sex group, and their much more relaxed kind of interest.

setting is a hospital because there are crippled children in wheelchairs, he may assert the attendants are nurses in spite of their very un-nurselike clothing.

Scoring

Responses are classed as scorable inferences, as nonscore responses, or as errors. Since it is desired that the test measure a subject's conceptualization as differentiated from his verbal ability, alternative expressions are viewed as equivalent for purposes of scoring. Examples of each class of response are included in the section above on Response Classification. Examples of each class of response to each picture are listed in the Scoring Guide.

As is more fully described in the preceding section, good inferences receive one point credit each. Certain general, ambiguous, or incomplete inferences receive $\frac{1}{2}$ point credit each.

Nonscore responses include irrelevant and improbable inferences. The nonscore category also includes descriptive or enumerative replies. Nonscore responses earn no credit.

Errors are misperceptions or misinferences. Each error response is marked with an "E" in the error column of the recording form.

The total of the inference (Inf) and error (E) scores (by count of inference points and number of errors) are entered in boxes at the bottom of each score sheet, and the over-all totals, separately for Inf and for E, are carried forward for entry in the score boxes in the upper righthand corner of the initial recording sheet. E is treated as a separate score and is not subtracted

from the Inf score.⁶

An Inf score of 150 is estimated as a theoretical maximum for Inf points. The number of good inferences that can be made is limited by the picture content. An E score of 50 is estimated as a practical maximum of error points. Although error is not limited by picture content, it is related to subjects' conceptual schema and verbosity.

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⁶ Their relationship is grossly curvilinear. Retarded subjects tested during the test development program (CA's 11 to 20) having Inf score in the range of 86 to 105 have typically made six or fewer misinferences (6 or fewer E points). At the opposite end of the Inf score continuum, some subjects who have earned few Inf points have made few E points because much of their response consisted of enumeration. Subjects, whose Inf scores have been in the middle range of 26 to 75 have made as few as two or three misinferences to as many as thirty (2 to 30 E points). If the E score were to be subtracted from the Inf score, the composite total score of subjects who were actively trying to comprehend what they saw, would in many cases fall below the composite scores of subjects who did little more than describe a situation.

