

WHO IS HE? WHERE IS HE?: A PRELIMINARY SEARCH OF THE
IMPORTANCE OF PERSONALITY AND ENVIRONMENT IN PREDICTION

by

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TABLE OF CONTENTS

| | Page |
|--|------|
| LIST OF GRAPHS..... | iii |
| INTRODUCTION - WHO IS HE? WHERE IS HE?..... | 1 |
| Chapter | |
| I. DISPOSITION VS. SITUATION..... | 2 |
| II. THE OBSERVER AND THE PLACE..... | 17 |
| III. THE METHOD..... | 23 |
| IV. STATISTICAL ANALYSIS AND RESULTS..... | 29 |
| V. DISCUSSION AND METHODOLOGICAL PROBLEMS..... | 42 |
| REFERENCES..... | 46 |
| APPENDIX A..... | 50 |
| APPENDIX B..... | 56 |
| APPENDIX C..... | 58 |

LIST OF GRAPHS

| Graph | Page |
|---|------|
| 1. Factor One - Relationship - vs. Means of Sum Difference... | 38 |
| 2. Factor Two - Complexity of Social Situation - vs. Means of Sum Difference..... | 39 |
| 3. Factor One - Relationship - vs. Means of Verbal Accuracy..... | 40 |
| 4. Factor Two - Complexity of Social Situation - vs. Means of Verbal Accuracy..... | 41 |

INTRODUCTION - WHO IS HE? WHERE IS HE?

In a typical courtroom scene in a juvenile court we see the parent standing before the judge uttering: "Your Honor, my Al's a good boy, he just got in with this bad gang and they led him astray." This is the same argument that was used with a little more sophistication in the famous Nuremberg trials. Were the defendants innocent as individuals and did the evil world around cause their behavior? Should an innocent person be able to act independently of the surroundings?

The research reported in this paper is a preliminary study of the relationship between the person and the environment in determining behavior. The whole study is encased in a larger goal of using and applying the human mind as a more accurate tool for perceiving ourselves and the persons around us. Instead of using abstract and abstruse scales and testing, it is important for prediction to be studied in a more naturalistic manner. John doesn't predict what Mary is going to do by testing her personality and then performing a correlational analysis. Instead he intuitively says: "She's going to" On what is the intuition based and when it is right, why is it right? If we know what to look for maybe we can predict more accurately. Knowing what to look for means we can better see the road for others and for ourselves.

This study consists of two interrelated parts: (1) the relationship between the person and the environment in determining behavior, (2) the ability of the human to judge and predict in a naturalistic way.

CHAPTER ONE

DISPOSITION VS. SITUATION

"It is native personality, and that alone, that endows a man to stand before presidents or generals, or in any distinguish'd collection, with aplomb - and not culture, or any knowledge or intellect whatever."

- Walt Whitman

"We, like the eagles, were born to be free. Yet we are obliged, in order to live at all, to make a cage of laws for ourselves and to stand on the perch."

- William Bolitho

Everyone wonders exactly what makes other people tick. Is it the gods that make men move in mysterious ways? Most scientific searchers for the cause of behavior have attempted to reduce the search to one cause. The search has started before conception. Heredity has long occupied a central position. The little homilies of "good seeds and bad seeds" have been spoken often. Galton's studies (Mussen, 1970) and many others have shown that many mental and physical factors run in families. Studies of twins (Mussen, 1970) reared apart have shown that heredity is more powerful than all but the strongest environments. However, for the most part, the studies of heredity (Mussen, 1970) have looked at gross characteristics of the

person such as height, intelligence, etc. The statistical results have been ambiguous. There are many black sheep in good families and white sheep in bad. Sometimes a specific hereditary defect has been shown to cause a characteristic behavioral syndrome. Phenylketonuria and the XYY syndrome are two examples. Heredity is known to determine many things in the physical part of man. In psychology, however, heredity is usually thought of as an ultimate limiting factor above which a person cannot go. Heredity can be used to predict daily behavior only when there is a major characteristic such as retardation; otherwise, the person shares too much with all men. The existence of a gene pool reduces the effect of defects and mutations in regard to the whole population.

The other side of the great controversy that went on four decades ago is that environment produces the organism and his behavior. The environments in question were not always obvious. The first environment for an organism is the interior of the mother in which conception takes place. From then on the organism is never without the environment and its influences. The environments studied were of two types--organic and behavioral. The studies that took an environmental base covered such diverse topics as in utero chemical changes, prenatal and perinatal complications, child rearing methods, social class, language spoken, and the country of origin (Mussen, 1970). These studies sought to take one item of the environment and show how this item caused great changes in the person. The results stressed similarities between the persons who experienced the subject environment. The environments of this sort have been used to predict how a person just going through the

experience will develop. A simple example would be the old idea that early weaning would result in a person more inclined toward oral gratification such as smoking. This single factor approach has difficulties in prediction because few early environments are so traumatic that all who experience them will act similarly in later life. Most of the early environments can be reversed or changed by later experience. Even massive maternal deprivation in infancy may be reversed in part by later treatment (Ainsworth, 1962).

To most psychologists the heredity-environment issue is dead. To some like Anastasi (1967) the issue is still alive but with a different emphasis. Instead of "Which one?" she asks "How?" She sees the two factors varying along a "continuum of indirectness." "The more indirect their connection with behavior, the wider will be the range of variation of possible outcomes" (Anastasi, 1967, p. 124). However, both heredity and environment as argued in the old controversy refer to the individual's past.

Who may regret what was, since it has made Himself
himself? All that I was I am.

- John Freeman

It is not the man who was but the man who is who we see acting out the drama of the day. The search for the cause of behavior has shifted from the past to the present. A man standing at a crossroads decides which way to go and the people of the past are not there to help him. He is unaccompanied but he is not alone. The past is there within him--partly inaccurate, partly inaccessible. All his heredity and past environment is there in his being. The man is a shadow of

his past and an image of his present. This shadow has been called the personality. The person today is more similar to the person he was yesterday than to any other person; therefore, there is a consistency to his personality over time. Personality is more than just a sum total of the person's past; there is an organization present that differentiates it from just history. Personality has been defined by Allport as: ". . . the dynamic organization within the individual of those psychophysical systems that determine his characteristic behavior and thought" (Lazarus, 1969, p. 59). The personality is internal, unseen, and contained in the neurology of the individual. Like electrons we cannot see the actual personality but we infer its existence from outside observations. The description is less of an image and more of a fingerprint.

Operationally, personality is the person's characteristic pattern of behavior. It is not merely a cataloguing of behavior. As Mischel (1968) points out, it is an abstraction of behavior. In practice the observer watches a person's behavior in many situations or in a specific situation and hypothesizes personality structures which he then uses to predict behavior in other situations. An example of how this observation operates can be seen in the inference of that part of the personality known as intelligence. The observer infers from the person's behavior on the intelligence test an abstraction called intelligence. This abstraction can be quantified. From this number, the observer predicts how the person will behave in other "intellectual pursuits". So far the observer is on safe ground. The prediction situation is close to the originally observed situation. It is like

predicting how a person will swim in a lake by watching him swim in a pool.

The existence of a personality as a characteristic pattern of behavior in the individual has been shown at a very early age. The abstraction of behavior in the very young child has been called the Primary Reaction Pattern (Chess, 1967). This pattern consists of "characteristics which can be delineated at two to three months of age in each child and which persist in a stable form as the child grows older . . ." (Chess, 1967, p. 159). Chess divides the infant personality into nine traits. Other theorists have used as few as one trait for this early period. Freud's oral drive (Hall, 1957) and Piaget's sensorimotor stage (Flavell, 1963) are examples of this. Usually these early traits are used for prediction as well as description. On the question of determining a child-rearing method for a child, the trend has been to advise parents of the existence of these traits so they can act accordingly. The value of the relative methods of child-rearing is great when compared to the earlier advice to parents to use one method alone. This single method was determined by social fad and not by the infant's personality.

If borne in mind, this (PRP) should help pediatricians to guide parents more accurately in child-rearing. If a mother understands the life style of her infant, and if it is possible for her to mesh her own personality into that of her baby's, child-rearing should proceed with a minimal amount of difficulty (Senn, 1968, p. 175).

Theoretically the personality of the infant and young child should be easier to describe than an adult's, since the child's personality is less complex and still forming. The youngest age at which any theorist assumes a complete personality is developed is three years (Hall, 1957).

As would be expected, if nine traits are assumed for an infant, then the number possessed by the adult would be considerably larger. The number of traits in the English language to describe a person is close to 18,000. Trying to work with this number of traits in research would be difficult. A method devised originally by Cattell to reduce the number is factor analysis (Mischel, 1968). Factor studies have lowered the number of traits down to five main factors: extroversion, agreeableness, conscientiousness, emotional stability and culture. The five factors identified, however, are very similar to the five factors that appear in just an analysis of the words themselves with no reference to real persons. Mischel (1968) in his book Personality and Assessment goes over the limitations of the trait approach to personality. He accuses the trait theorists of tautology in their explanation of behavior: "He behaves anxiously because he has a trait of anxiety." The reliability and validity coefficients of traits are very low, averaging .3. "With the possible exception of intelligence, highly generalized behavioral consistencies have not been demonstrated, and the concept of personality traits as broad response predispositions is thus untenable" (Mischel, 1968, p. 146). Some theorists have tried to get around the low results obtained with traits by introducing the idea of probability. As Mehrabian (1968, p. 96) put it in his analysis of habits,

When an individual is faced with a choice of several behaviors, the behavior relating to habits which are high on the hierarchy of habits (i.e., strong habits) are more likely to occur than the behaviors relating to habits which are low on the hierarchy of habits (i.e., weak habits).

Greenstein (1970) has carried the idea of probability even further by listing eleven conditions under which the personal variable or personality can affect behavior. His analysis is in regard to political behavior but a deletion of the political aspect does not affect the sense. He states:

1. There is greater room for personal variability in the 'peripheral' aspects of actions than in their 'central' aspects.

2. The more demanding the act - the more it is not merely a conventionally expected performance - the greater the likelihood that it will vary with the personal characteristics of the actor.

3. Variations in personal characteristics are more likely to be exhibited to the degree that behavior is spontaneous - that is, to the degree that it proceeds from personal impulse, without effort or premeditation.

4. Ambiguous situations leave room for personal variability to manifest itself.

5. The impact of personal differences on behavior is increased to the degree that sanctions are not attached to certain of the alternative possible courses of behavior.

6. The opportunities for personal variation are increased to the degree that actors lack mental sets which might lead them to structure their perceptions and resolve ambiguities.

7. If the degree to which certain of the alternative courses of action are sanctioned reduces the likelihood that personal characteristics will produce variation in behavior, then any intense disposition on the part of actors in a contrary direction to the sanctions increase that likelihood.

8. If, however, the disposition that is strong is to take one's cues from others, the effects of personal variation on behavior will be reduced.

9. A situational factor working with individual tendencies to adopt the views of others to reduce personal variation is the degree to which the individual is placed in a group context in which 'the individual's decision or attitude is visible to others.'

10. The more emotionally involved a person is, the greater the likelihood that his personal characteristics will affect his behavior.

11. Personality variations will be more evident to the degree that the individual occupies a position 'free from elaborate expectations of fixed content.' (Greenstein, 1970, pp. 511-514).

If one of these conditions is not met and the personal variable is not causing behavior then what is the determinant?

Many theorists feeling that the evidence for personality as a determiner of behavior is weak, have discarded the concept entirely. The only determiner they see is the environment, stimulus or situation. Such theories as behaviorism and learning are well known for their one-sided view of determinism. Bloom (1964, p. 187) has defined the environment as: ". . . the conditions, forces, and external stimuli which impinge upon the individual." Behaviorists and S-R theorists have seen the environment as something so powerful that once a stimulus is presented the organism will respond. The organism, if it is looked at at all, is simply a black box which sometimes may not function properly and introduces error into an experiment. The behaviorist's "error" is the trait theorist's "personality". Even some researchers (Escalona, 1959) who have started out using personality determinism have confessed the power of the environment. As Escalona (1959, p. 87) sums up in her prediction study: ". . . the predictability of overt behavior is in large measure a function of the predictability of the relevant determining variables which, in the case of these behaviors, lie largely outside of the child himself."

In Bloom's (1964, p. 184) study of human characteristics he speaks of the importance of environment: "The point to be emphasized

is that the introduction of the environment as a variable makes a major difference in our ability to predict the mature status of a human characteristic." In fact he goes even further to say that if an environment continues constant for a long time individual differences will vanish. Most people live and work in a similar environment and they choose friends and activities which are similar. Consequently, people exhibit a consistency of behavior that is not due to their personality but rather to a stable environment.

The outcomes an individual obtains for particular behavior patterns tend to be relatively permanent when he remains in a social environment that reacts to his behavior consistently. Since people typically live within the same culture for considerable periods of time, they remain exposed to fairly consistent contingencies within their own home, school, social, and vocational settings. Societal rules and sanctions usually are deliberately constant, and even codified formally, thus facilitating temporal consistencies in social behavior. (Mischel, 1968, p. 283).

If we know a person's environment from moment to moment then we can predict his behavior. However, while there are, ". . . literally thousands of measures designed to tap individual differences in traits and states. . . , measures of the environment generally have been limited to a handful of fairly gross estimates of socioeconomic status" (Mischel, 1968, p. 288). An attempt to produce smaller units of environment have been applied to the Midwest Behavior Records of Barker by Phil Schoggen (1963). He labels his units Environmental Force Units (EFU). The EFU applies just to the social environment. The breakdown of the physical environment into units with the resulting effects on behavior has been a subject of architects for many years and is now entering psychology as a branch called environmental psychology. When a prediction is made from knowledge of both the social

and physical environments, it should be very accurate. Rigid control of the environments should lead to highly predictable and standardized behavior. Yet even when the environment is extremely powerful such as an army, a concentration camp or a hospital there is still some individual variability.

If the situation alone were important, then parents could be instructed in the optimal child-rearing method and all children would be similar. Yet, as we saw before, even with infants environment is not all: ". . . the character of the response of a young child to specific situations or to the over-all attitude of the parent is the result of the interplay between environmental factors and the primary reaction pattern" (Chess, 1967, p. 163). It can almost be said that in reality there is no environment so powerful that it can produce a behavior in which personality has no part. Some "brainwashings" and physical reflex actions are close but not completely devoid of "individual variability". On the other hand there is no personality so strong that it can act regardless of environment. Even the insane make some concessions to environment. Sarason and Smith (1971, p. 393) bring much of psychology to task in their review of personality research. They reported:

In recent years certain personality psychologists have emphasized the roles of situational factors and environmental contingencies while at the same time either ignoring, dismissing as unimportant, or de-emphasizing the contribution of dispositional variables. . . to the understanding of behavior. There can be no quarrel with the position that stimulus factors are powerful determinants of behavior. However, we do question the scientific wisdom of simply relegating, as it were, individual differences to the 'error term.' Their systematic inclusion in research designs allows not only the study of situational variables,

but also assessment of the manner in which individual differences serve to moderate S-R relationships. (Sarason and Smith, 1971, p. 393).

Sarason and Smith (1971, p. 395) go on to say that: "one of the significant developments in personality research during the past two decades has been the exploration of a third path that incorporates both individual differences and experimentally manipulated variables." Some of the newer social psychology research echoes the older S-R model. Nowak (1970) puts forth the old wine in new wineskins approach in his description of Stimulus-Person-Behavior analysis. Personality is described as an intervening variable with the stimulus as the determiner of the behavior. This is just naming the black box and it still places personality in the background.

To this researcher a more accurate model would be the need-press theory of Murray as described by Mehrabian (1968, pp. 100-107). Murray used three unique terms. The attributes of a person or his personality is called the needs of the person. Needs as envisioned by Murray are more than just the physical drives. The alpha is "the organismic other-than-self experience" or the objectively assessed qualities of a context. The beta is the "phenomenal other-than-self experience" or the subjective and possibly distorted experience of or response to a situation. Murray's formulation can be described this way: "Behavior (the beta construction) is a function of the context (the alpha situation) and the intrapersonal characteristics (his needs)" (Mehrabian, 1968, p. 102). Unfortunately, much of the research done under this model seems to suffer from the problems the trait theorist had, i.e., the attempt to reduce the number of needs to a mere handful

and the little use of environmental variables. The so called statistical approach to psychology seems to make the task of predicting the behavior of an individual more difficult. The statistical approach in its attempt to find averages removes the response of the individual from view.

In opposition to the statistical model, clinical and humanistic psychology have raised the banner of the individual. In basing their work on the intensive study of a few persons they have made predicting the behavior of other persons difficult. There is not a wide enough base for surmising what behaviors are the result of particular combinations of the environment and the person. Most clinical research tends to underemphasize the environment. Perhaps more accurate predictions can be made by combining a wide range personality measure such as the MMPI (Welsh et al., 1956) with an extensive list of environmental measures such as the EFU for social environment and the physical measures being developed by the environmental psychologist. In addition there would have to be a general understanding of how these factors are interrelated.

A third factor in prediction that is rarely mentioned is the concept of development or maturation. For adults the stages of development are mostly past history. Freud used development in his work as something that might have gone wrong. With children the stage of development is vital in regard to prediction. Prediction based on a child's present personality and a projected environment become more tenuous as it is projected further into the future. While a child does possess some consistencies, he is also more various over time than an adult. Part of the variability is due to changes brought by maturation. New

behaviors and potentials unseen in the young child can appear later and dramatically change a prediction. Even with short term prediction, the developmental stage of the present results in limitations on the range of behavior that would occur in an adult resulting from a given personality and environment.

To summarize, the researcher sees the following necessary for accurate prediction. Three main items are required--knowledge of the person's personality, his environment, and developmental stage as forecast for the time being predicted. The personality of an individual consists of the basic patterns present at birth, the modifications and additions compounded as a result of the treatment of and adaptations to the past environments, and the present and past developmental stages. The environment is composed of both the social and physical conditions present at the time being predicted and, for longer term predictions, the major environments that will intervene between the present and the predicted environment. The developmental factors are those stages between the present and the predicted period and the stage which the person will be in during the predicted period. Included is a forecast of how the intervening stages will be resolved. Obviously, for short term predictions the difference between the present and predicted personality, environment, and developmental stage will approach zero as the period between present and predicted approaches zero. During equal time spans the developmental stage concept is more important for children than for adults. In addition, both the environment and personality may have parts that are unconscious to the individual being predicted.

So far the prediction process has been based on an assessment of the subject and his environment by a second party. Humanistic psychology has a strong undercurrent of basing prediction on a person's "future" behavior, i.e., what does the person want to do or think he will do. Who would have a better knowledge of a person's past and present but the person himself? Barring unconscious determinants, the easiest and maybe the most accurate method of finding out how a person will act in a future situation is to ask him. This is the rationale behind the Gallup poll. Humanistic psychology, speaks of the goal, will and choice of human life. Buhler, May and Bugental (1967) see man as directed by his own intentions, not as a boat forced this way and that by the tides of personality and the winds of the environment. Instead of "unbiased" second parties assessing personality, etc., there would be a definite value to involving the object person in the prediction process in a more active way. The only possible limitation would be in predictions with young children. For them the developmental stages they will go through, but are as yet unaware of, will form a necessary part of the prediction process. In addition, the limitations on communication and perspective would make direct forecasting by them difficult.

"If once a man indulges himself in murder, very soon he comes to think little of robbing; and from robbing he next comes to drinking and Sabbath-breaking, and from that to incivility and procrastination."

- Thomas De Quincey

"The true goal of science is not the prediction and control of events but the understanding of them. Prediction is merely the way we test our understanding of the world around us, and control of that world is the practical reward of our efforts."

- Developmental Psychology Today

CHAPTER TWO

THE OBSERVER AND THE PLACE

"I pitied him in his blindness; But can I boast,
'I see'? Perhaps there walks a spirit close by,
who pities me."

- Harry Kemp

"Tis with our judgments as our watches, none
Go just alike, yet each believes his own."

- Alexander Pope

Personality testers have long had the problem of interest reliability. There is no standard for personality tests such as the Binet is for intelligence tests. Even personality tests purporting to measure the same thing, such as anxiety, do not agree. Large range tests such as the MMPI still measure such a small part of the total personality. The task of personality measurement seems like picking up two rocks and saying that this is what the moon is like. If it were possible to administer to a person all the tests purporting to measure personality and store the results in a computer, results would still be inconclusive. On a small scale this is what some factor analysts have tried. As Mischel (1968) pointed out, adding tests to a basic test does not increase the accuracy at all. In fact none of the tests are as accurate as a simple social history or a period of observation. Observation of past behavior for prediction can be

straight forward, particularly when the observed situation is similar to the predicted situation. Or the observation may involve the making of inferences. Almost every psychological theory is founded on observation. Freud observed his patients, Skinner observed behavior in a laboratory, Rogers observed college students, and Maslow and Lewin observed "normal, healthy" people. One of the contentions of many therapists is that personality testing only tells us what we already know by observing the patient.

What are some of the issues in observing behavior to form a basis for prediction? "Since observing an individual over even a brief period of time involves a huge amount of behavior, it would be impossible to observe, record, and interpret more than a very small proportion of an individual's life behavior" (Lazarus, 1969, p. 510). All testing is simply brief observations of behavior in a standardized situation. Just as Mischel (1968) reports that clinicians have low reliability in interpreting personality tests, so there is a greater chance of multiple interpretations in any short observation.

You might see a mother grab her child who is running out into the street. You may think she is trying to protect her child from being hurt. But a moment later you may hear her say as she spans the child, 'Don't you ever hit your little brother again!' and you realize that she was reaching for the child to punish him for something else. Someone else who had observed the incident from the beginning might report that the child had been running into the street simply to escape from his mother. In this event, the essential psychological phenomena are the experiences of the child and of the mother. If we could get into the child's mind, what would we find that he was trying to do? What would the mother tell a close friend that she was doing? The phenomena you observed as a disinterested third party might also be of interest in terms of how people interpret the behavior of others. But for each of these

viewpoints - yours, the child's, and the mother's - the psychologist needs to obtain dependable observations on what the phenomena were from that particular perspective. (Developmental Psychology Today, 1971, p. 519).

Most writing on observation emphasizes the negative aspects. Questions of reliability and bias occur in the best observations. Conscious and unconscious distortion can be caused by observer gain, such as when parents observe "good" behavior by their child. This distortion can operate through selecting or ignoring certain parts of a behavior. All of the other factors of observer error are present for any perception by a human being--habituation, expectation, stimulus error and suggestion. Despite the errors of human observers of human behavior there are some great advantages. The human being, his personality and environment are extremely complex as the failures of trait testing methods have shown. An example of the use of a human observer for prediction was the Prediction and Outcome study by Escalona and Heider (1959). Working from a mass of testing and observation data of the Infant Project and in a similar cultural environment, Escalona incorporated the data into a mental "picture" from which she made her predictions. This is analagous to a computer being fed data on an individual with a data bank of cultural expectations, environment and developmental changes, which is then programmed to produce a computer model from which prediction is made. In Escalona's case the computer is that old standby, the human brain. In the general case, the observer, often through a distorted lens, watches the behavior of another, codifies it, anticipates projected environment changes, and forms a prediction of the other's behavior. This process is carried out many

times a day whenever one person anticipates another's actions. The mother buying a present for her child, the husband coming home late and anyone who wonders, "What will he do if . . . ?", carry on a similar mental process. The perception of another's personality in this model is not broken into verbal traits. Most of the "work" is preverbal. An animal or mental patient can judge another person's personality quite accurately. Their "computer model" does not have the sophistication of Escalona's, but can be just as accurate for a short term.

Another way that a person predicts the actions of others is to put one's self into their place. This method is used particularly if the data on the other's personality is weak or if the predictor is egocentric. If A's personality is similar to B's, the prediction of B's actions by A would be more accurate than if the similarity did not exist. Likewise, if A's environment is similar to B's, the process is enhanced. In fact, the environment similarity is a necessary part of the "as if I" process. The American trying to figure out what the Red Chinese are doing finds the process very difficult. Thus there are two methods for prediction in the human: 1) model building and 2) the "as if" process.

A consideration in the observation of behavior when one is building a model is how representative the observed behavior is. Testing is a highly structured form of observation. A test presents a standardized environment. However, if the person being observed by this method is not used to the testing environment, his performance will not be representative of his usual behavior. The more structured a situation is the less likely that it may evoke a regular part of the

person's behavioral pattern. In research, if behavior is observed in set up situations, there is the danger of experimenter bias in the environmental setting. Early studies of moral behavior were of low reliability because, as Hartshorne and May found out: ". . . even such slight changes in the situation as between crossing out A's and putting dots in squares are sufficient to alter the amount of deception both in individuals and in groups" (Mischel, 1968, p. 24).

The alternative to a structured situation is observation of natural free flowing behavior. The relationship of the structured to the natural situation is similar to that of a political map to a topographical map. The discussion by Barker (1963, p. 3) on behavioral units and behavioral tesserae demonstrates the difference between structured and natural observation of behavior and the people who use them.

. . . they allowed few natural features of the behavioral terrain to interfere with the structures imposed by their experiments, tests, questionnaires, and interviews. They imposed a geometry upon behavior, a geometry grounded upon the axioms of experimental design and statistical methods, a geometry which reveals nothing directly about the behavioral surface upon which it is imposed. (Barker, 1963, p. 3).

An example of a large scale study of natural behavior is Barker's (1955) Midwest Study in which observers followed and recorded all the behavior of several children during the day. Another example is the study by Soskin and John (1963) which monitored the spontaneous conversation of two couples by means of radio equipment. The advantages in completeness of using natural behavior over structured behavior for observation are great; however, a difficulty arises in the use of natural behavior for research. Barker (1963) and Dickman (1963)

had the problem of dividing the natural behavior into units and from their studies they devised the behavioral episode. The episode has three characteristics: (1) consistency in the direction of behavior, (2) occurrence within the normal behavior perspective, and (3) the whole episode has more potency than the parts. (Barker, 1963, p. 161). However, if certain behavior episodes are selected out of a larger stream there is the problem of selector bias. Although the selector bias will affect an experiment as much as the bias in setting a situation, the error is not in causing new behavior but in picking a natural situation that has a low probability of spontaneous occurrence. The probability of a strange environment in a contrived situation is greater than the probability of a strange environment in a particular natural situation.

It is one of the underlying assumptions of this study that a human observer using natural behavior would have a better knowledge for model building in prediction than a mechanical observation in a structured situation. Second, for "as if" prediction the closer the predictor is in personality to the observed person the more accurate will be predictions.

CHAPTER THREE

THE METHOD

The experimental design consisted of two independent concepts--personality and environment--and how these affect short term prediction. Personality was operationally used as a non-quantitative gestalt as perceived by other persons. Environment was restricted to the social environment. The subjects were eight pre-school children attending the Child Development Laboratory at Kansas State University in the Spring of 1971. The children were four and five years of age.

One of the most accurate methods of prediction is simply to ask the individual what he will do in the future situation. However, small children do not possess the communicative ability to use the language of description. Their cognitive representation is tied to the present. Their egocentric thought is here and now and there is just the beginning of understanding of consequences. The closest person to a small child, i.e., the person who has observed him more, is his mother; therefore, she has a large amount of knowledge of his personality available for model building. She is also recognized as a source of much of the child's personality. Thus, there is a similarity in the two persons which at the age of four and five is greater than that between any other adult and the child. The mother would consequently possess the greatest ability to predict in an "as if" manner. A nursery school teacher who has contact with children in the age range of the subject and who also possesses a "theoretical" knowledge of

children would be able to build a general model of a child from which to predict behavior. Insofar as there are general characteristics of pre-school child behavior, the nursery school teacher would tend to be more accurate in prediction than a person who has no contact with or factual knowledge about children. Using this argument one can rank three persons according to their knowledge of a child's personality--the child's mother, a nursery school teacher, and a stranger who has little knowledge of children. For the members of this ranking there is a confounding effect of knowledge of the specific environment. Since the situations (to be explained later) took place in the nursery school, a ranking according to knowledge of this specific environment would be--nursery school teacher, child's mother, and least, the stranger.

In this design the environmental factor is accounted for by the increased complexity of the social environment as a part determiner of behavior in three different situations. Each child is involved in the three situations. Although behavior is determined by both personality and environment, the strength of each factor varies in each situation. Referring to the eleven criterion for the action of personal variability postulated by Greenstein (1970), if a situation that meets one of the eleven criterion is observed, it contains more personality component to the behavior than a situation that does not meet the criterion. In addition, the more persons involved in a situation create the greater chance that the behavior manifested by any one of the persons is due to a composite of the individual personalities, i.e., the social environment. A simple example would be the way a child alters his

behavior when with a strict adult rather than an indulgent adult. The child has not changed, but his social environment has. His resulting behavior would be more acceptable to the situation at hand. The researcher had this occur with the group of children in the subject nursery school. The children exhibited far more aggression when with the researcher than was usual with the regular teacher.

Operationally, three situations were used for each child that varied according to the complexity of the social environment, i.e., the number of interacting persons. One situation had the child acting alone; the second, with one or two others; and the third, in a group activity.

There was a two factor design used in the experimental analysis. Factor one consisted of knowledge of the child's personality and factor two was the complexity of the social environment. The dependent variable was accuracy of prediction of behavior.

The specific methodology involved extracting the situations mentioned above from the naturally occurring behavior in the nursery school. A videotape was produced consisting of a running record of several nursery school periods. From this videotape record the required situations were extracted. The situations were defined according to Barker's definition of a behavior episode. In addition, there was one point in each situation which might be termed a climax. A climax was a point in which the following behavior could go in several different directions. In some cases the climax was a frustration of the previous behavior in the episode. Following the frustration the child had several alternatives of behavior. An example would be the situation in

which a boy was playing in the sand and a girl picked up his shovel and started to use it for her sand play. The boy had several alternatives of behavior dependent in part on his personality and in part on the interaction between the two of them. Once the three situations for each child were determined, the tape was edited so that the behavior leading up to and including the climax was on one segment and the result of the climax was on a second segment.

The three predictors--the child's parent, a nursery school teacher, and a stranger--observed the first segments of each situation and made their predictions. The observation of the first segment was deemed necessary for two reasons: (1) it gave an indication of the child's mood at the time, (2) it gave an indication of the climax and the events leading up to it. Both of these reasons served to restrict the range of possible behavior predicted and it gave an "intelligent" basis for prediction. Unavoidably, the preview of the first segment also gave the predictors (who did not know the child) a glimpse of the child's behavior and, as Lazarus (1969) points out, from this little segment an observer can make an inference of personality which may not be reliable. If this inference were based on reliable behavior, it would assist the accuracy of the stranger more than the parent. On the other hand, the preview would aid the parent in decreasing the range of her predicted behavior since she could use the information on the child's mood in a more efficient manner. Similarly, the nursery school teacher will not find her model aided by the preview as much as the stranger and she will not be able to use the mood information as efficiently as the parent. Hopefully the preview information,

although used differently by each participant, would serve to increase accuracy across the board.

The predictors predicted in two manners: (1) a verbal prediction of gross behavior, (2) a prediction on a nine point behavior scale. The nine point scale was adapted from the nine behavior traits used by Thomas (1963) in his study of Behavioral Individuality in Early Childhood. The nine traits are: (1) activity, (2) rhythmicity, (3) approach or withdrawal, (4) adaptability, (5) intensity of reaction, (6) threshold of responsiveness, (7) quality of mood, (8) distractibility, (9) attention span or persistence. These are not traits in the sense of personality traits because they are not related to inferred structures but rather to directly observable behavior. The nine traits were loosely defined to the predictors and there were slight changes of exact definition between the predictors. Each trait was ranked on a five level scale (see Appendix A).

Following the prediction phase, the predictors saw the second segment or outcome of each of the three situations and completed the nine rating scales a second time according to how the child actually reacted to the climax. In short, the task of each predictor was to watch the first segment of a situation, give a verbal prediction of the gross behavior that would result from the climax, then predict on the nine scales. After all the first segments were seen and predicted on, the second segments of each situation were observed and the nine scales were rated according to the actual behavior.

A slight amendment was added in the makeup of the predictors. The parent was the mother or mother and father of each child--eight children, eight mothers. The nursery school teachers consisted of

two teachers who observed the situations for four children each. The second segments were not observed until all the first segments were seen. The strangers were two persons who had no contact with the children. They had no children of their own and they knew nothing of the nursery school except of its existence. They followed the same procedure as the nursery school teachers except that the child subjects for each stranger consisted of one-half of the subjects of each nursery school teacher. Two boys and two girls were seen by each nursery school teacher and each stranger.

CHAPTER FOUR

STATISTICAL ANALYSIS AND RESULTS

"He uses statistics as a drunken man uses lamp-posts - for support rather than illumination."

- Andrew Lang

The main experimental design consisted of two main independent variables, hereafter called dimension one and dimension two. The first dimension was the relationship to the child and it was ranked according to the amount of knowledge three classes of persons should have of the child's personality. From greater to lesser knowledge the ranking was: parents (P), nursery school teacher (N), and strangers (S). The second dimension was the social complexity of the situation for the child. This dimension was ranked according to the number of persons interacting with the child in the situation. The three types of situations were: (1) the child himself (I), (2) the child with one or two other persons (W), (3) the child in a large group (G). The dependent variable was accuracy of prediction. This variable was operationalized in two ways. The three groups of persons that comprised the first dimension saw the first part of the videotape of the three situations that comprised the second dimension. The first part of the tape consisted of a prelude and a climax in a behavior episode (mentioned previously). The persons predicted how the episode would evolve following the climax. The segment of the episode on which the prediction was made is termed the outcome. The predictions were made two ways and each method was compared

to the outcome. The first method, and the first operationalization of the dependent variable, involved the verbal predictions of gross behavior, such as he ran or he sat, etc. This verbal prediction was compared to the outcome and each verbal prediction was assigned to one of three categories: (1) behavior and timing predicted correctly, (2) behavior predicted correctly but the timing was off, (3) behavior not predicted. For example, if the parent predicted that the child would throw a ball then ride a tricycle and if this is what happened in the outcome, the prediction was assigned a score of one. If the predicted behaviors occurred but in reverse order or only one of the behaviors occurred, the prediction was scored two. If the child did neither behavior, the prediction was scored three. Thus the first operationalization of the dependent variable yielded scores of one, two or three.

The second attempt to operationalize the dependent variable involved rating the behavior predicted and the behavior that occurred on nine scales. The nine scales, mentioned in the last chapter, were: activity, level, rhythmicity, approach or withdrawal, adaptability, intensity of reaction, threshold of responsiveness, quality of mood, distractability, and attention span. After each verbal prediction, the predictors filled out the rating form according to how they thought the outcome behavior would represent these behavior traits. For example, if the rator (when the persons who make up the first dimension are predicting verbally they will be termed predictors, when predicting on the nine point scales they will be termed raters) felt that the child would be very active, she would rate the child high on the activity level scale. The rator then saw the outcome and completed the nine

scales a second time on the basis of the actual behavior. The difference between the predicted and the outcome levels on each scale was determined and the absolute values of the difference of the nine scales summed. This sum of the differences, hereafter called sum difference, made the numerical value of the dependent variable in the second attempt to operationalize the dependent variable. The numerical results of the first operationalization of the dependent variable will be termed Attempt one. The second operationalization will be termed Attempt two.

Plan of Analysis

The statistical analysis of the results will be presented in the following manner. First the Attempt two results will be analyzed by four statistical tests. Each test in order presents a more detailed examination of the activity of the two independent variables. In addition, each test in order is more powerful than the one prior; however, as the power increases so does the likelihood of violating a test assumption. The four tests and their focus are: Chi Square, which focuses on the interaction of the two independent variables; Kruskal-Wallis, which examines the strength of each independent variable (as a whole) in isolation; the Duncan Range Test, which examines the individual rankings within each variable; and finally, the Analysis of Variance which is used to determine the character of the interaction of the two variables. Following the regular analysis, other possible confounding factors are examined for their effect on the dependent variable. The factors examined are sex of the child, fluctuation of the scale definitions, a practice effect, and the possibility that the situations used were unique in the child's behavior pattern.

The results of the verbal predictions of gross behavior or Attempt one are then presented. First there is a correlation between the Attempt two and the Attempt one results. Second, there is an examination of the relationship between the independent variables and the Attempt one dependent variable. The statistical tests used are the Chi Square and the Duncan Range Test. The lack of significant results made a more detailed statistical analysis useless. A check is then made to see if the limited range of the Attempt one results affected the earlier analyses.

Lastly the results of the two attempts are presented graphically. The findings of the Analysis of Variance of Attempt two indicated the need for a graphic analysis. In addition, the graphs indicate other possible hypotheses of relationship and/or errors in experimental design. The discussion of the possible alternatives and errors are presented in the Discussion chapter.

Results

The Chi Square table giving the results for Attempt two is presented in Appendix B. The Chi Square test yielded a value of 10.05 which is significantly beyond the .05 level. The test assumptions of independence, exclusiveness of observations and size of sample were met for the Chi Square. Thus the statistical null hypothesis of neither factor differing in its distribution among the other can be rejected. It can be assumed that the one independent variable of relationship varied the accuracy of prediction, the dependent variable, in the different situations; and vice versa. The means of each dimension were tested by the Kruskal-Wallis test. The H_{obs} for dimension

one (relationship) was 13, for dimension two (complexity) was 11. The .01 critical level for H_{obs} is 9.21. The additional test assumption of a continuous dependent variable is met; therefore, the statistical null hypothesis of no difference between the three means within each dimension can be rejected. It can be assumed that the differences between the means of the parents, nursery school teacher and stranger differed significantly and that the differences between the means of the individual, small group, and large group also differed significantly. The Duncan Range Test was then used to break down the analysis to the individual ranks within each dimension. The means for the first dimension were $P=7.95$, $N=6.75$, and $S=9.45$. The Duncan Range Test showed that each mean is different from the others beyond the .01 level. The means for the second dimension were $I=6.66$, $W=9.12$, and $G=8.36$. All of the means are different from each other beyond the .01 level except the difference between the means of W and G which was only significant at the .05 level. The prior three tests indicate that the dependent variable was effected by the interaction of the two independent variables as well as each variable and that the operational use of each variable yielded groups that differed from one another. A parametric test, Analysis of Variance, was used to examine the interaction effect. The test assumptions of an interval scale, normality, and equality of variance may not be met, resulting in underestimating any differences. The Analysis of Variance yielded non-significant F ratios for each factor, but shows an interaction F ratio significant beyond the .01 level. The strong interaction effect with a lack of

significance for each factor calls for a graphic analysis, which will be presented later.

Several confounding factors were checked. First the sex of the child being predicted did not affect the dependent variable. Second, even though the rators saw the same outcomes, they disagreed on the outcome ratings. This was due, in a large extent, to the fluctuations in scale definitions between persons; each person defined what she saw differently. Third, there were presented to some of the rators twin situations, i.e., two situations that had equal probability of being used from the continuous master videotape as an individual (I) or small group (W) situation. The one of the twin I or W situations used in the earlier analyses was selected at random. The result of the twin situation seen first by the rator had a greater difference between the predicted and outcome ratings than the twin situation presented second. This result would indicate a practice effect operating. If there was a practice effect over all the situations of a child for each rator, it was masked by the effect of the second dimension (social complexity of the situation). The last statistical analysis of the Attempt two results was to check if there was a relationship between how much the parents thought that the outcome behavior was representative of their child's behavior (as indicated by the rating on the rhythmicity scale) and the accuracy of their prediction. The higher the rating on the scale the more the child acted "like he always does". The correlation between this one scale and the accuracy of the parent was .843 which is significant beyond the .001 level. Thus, the more regular the child's outcome behavior was, the closer the parent's prediction was to it.

The second part of the report of results involves the data from Attempt one. Attempt one compared the verbal predictions of behavior to the behavior that occurred in the outcome. The comparisons were made on whether the predicted behavior occurred and in what sequence it occurred. This operationalization of the dependent variable (accuracy of prediction) used in Attempt one was tested for correlation with the operationalization used in Attempt two. This test yielded a correlation of .29, significant beyond the .01 level. This low correlation would indicate some correspondence between the results obtained in the Attempt two results and the Attempt one results. As we shall see later, this correspondence is more evident in the graphic analysis than in the statistical analysis. The Attempt one results were then analyzed using Chi Square. The table for the Chi Square is presented in Appendix C. The value obtained was .374--extremely non-significant. Each factor was then analyzed using the Duncan Range Test. The first dimension (relationship) yielded no significant differences between the means. The second dimension (complexity) had only one significant mean. The small group (W) level was significant at the .01 level from both the individual and large group means. The researcher wondered if the discreteness and limited range of the dependent variable might have affected the prior statistical analyses. A Chi Square analysis was performed in which the independent variables were the relationship, dimension one in the main analysis, and the three levels of accuracy. The dependent variable was the percentage of predictions. The Chi Square value was 14.09--significant beyond the .01 level. There was a decrease in accuracy as the relationship variable, dimension one,

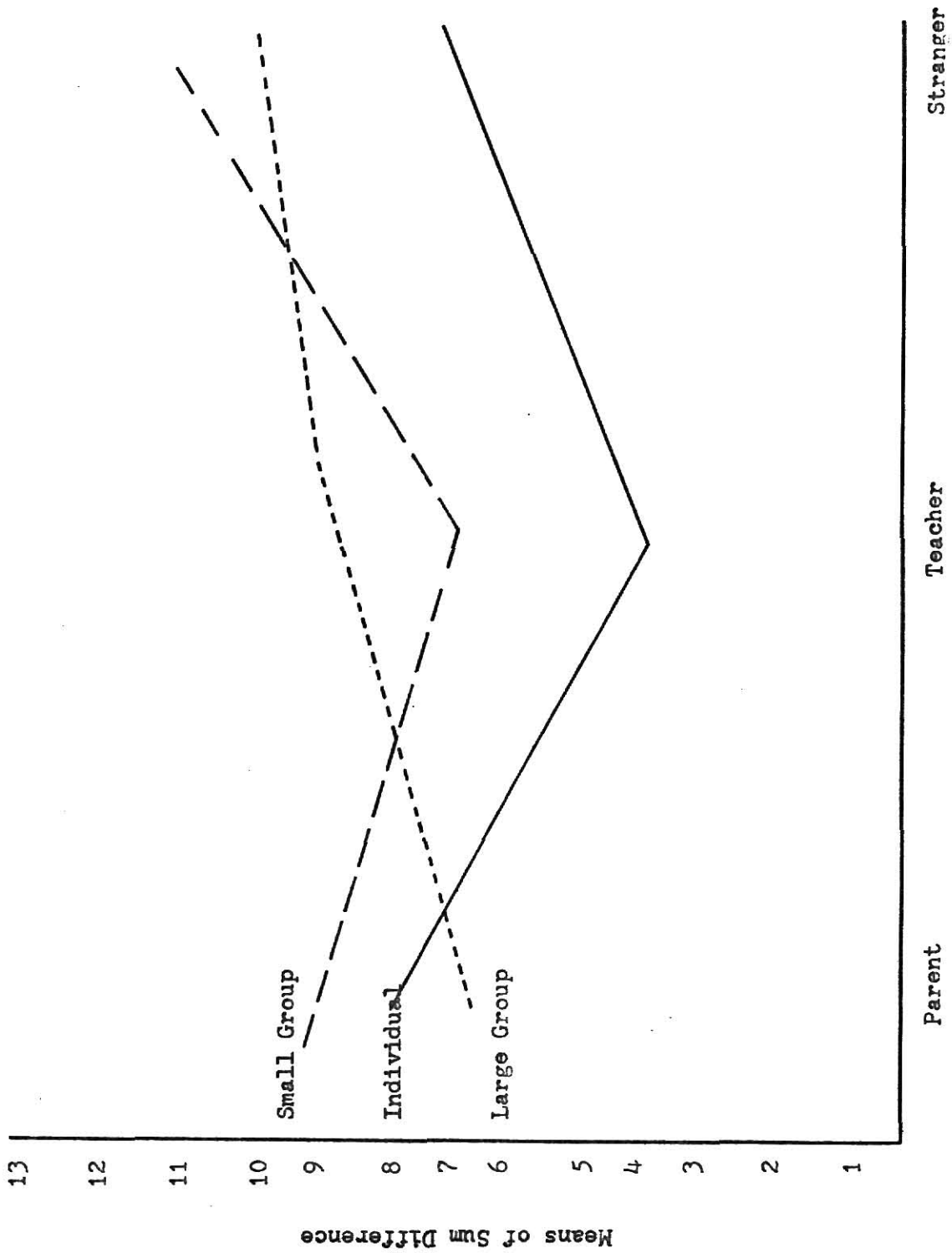
progressed from parent to nursery school teacher to stranger. However, the second level of accuracy, behavior predicted correctly but timing off, comprised only 13% to 23% of the predictions for any relationship level. The bimodal character of the dependent variable in the earlier analyses, accuracy of prediction, and particularly in the Chi Square analysis in the table in Appendix C, would have adversely affected the results.

The third report of results will be graphic. The result of the Analysis of Variance reported in the Attempt two results suggested that the slopes of the two dimensions in Attempt two are not linear. Graphs 1 and 2 are based on the results of the dependent variable in Attempt two. Graphs 3 and 4 are based on the results of Attempt one. The odd numbered graphs, 1 and 3, use the first independent variable, relationship, as the base. The superimposed lines are for each of the three levels of the second independent variable, social complexity. The even graphs are reversed. The vertical axis in all four graphs is the value of the dependent variable. Of interest here is not the actual numerical values, but the slopes within each graph. Graphs 1 and 2 and graphs 3 and 4 each have similar slopes. Factor one, relationship, has a uniform positive slope only for the large group situation on both the scale and verbal predictions. The individual and small group situations show an increase in accuracy of the nursery school teacher over the others. Looking at graph 2, the increased accuracy of the nursery school teacher shows up in the lower line for the individual and small group situations. Graph 4 shows a similar trend but not as pronounced. Looking at factor two, complexity of

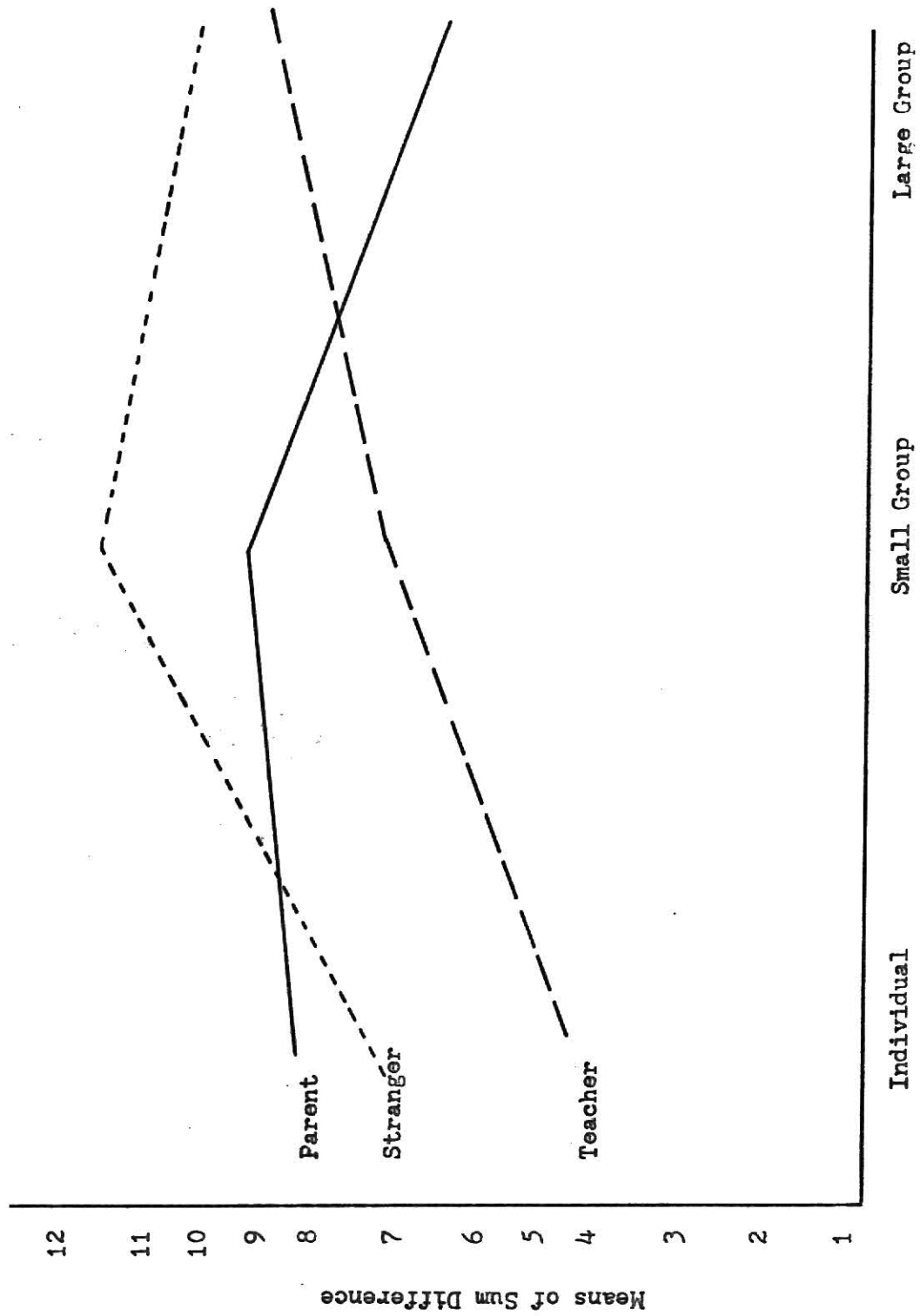
social situation, it seems that, as graphs 1 and 3 point out, the small group situation was hardest to predict. In graphs 2 and 4 this difficulty of predicting the small group situation shows as a break in the slope for all the predictors.

**THIS BOOK
CONTAINS
NUMEROUS PAGES
WITH DIAGRAMS
THAT ARE CROOKED
COMPARED TO THE
REST OF THE
INFORMATION ON
THE PAGE.**

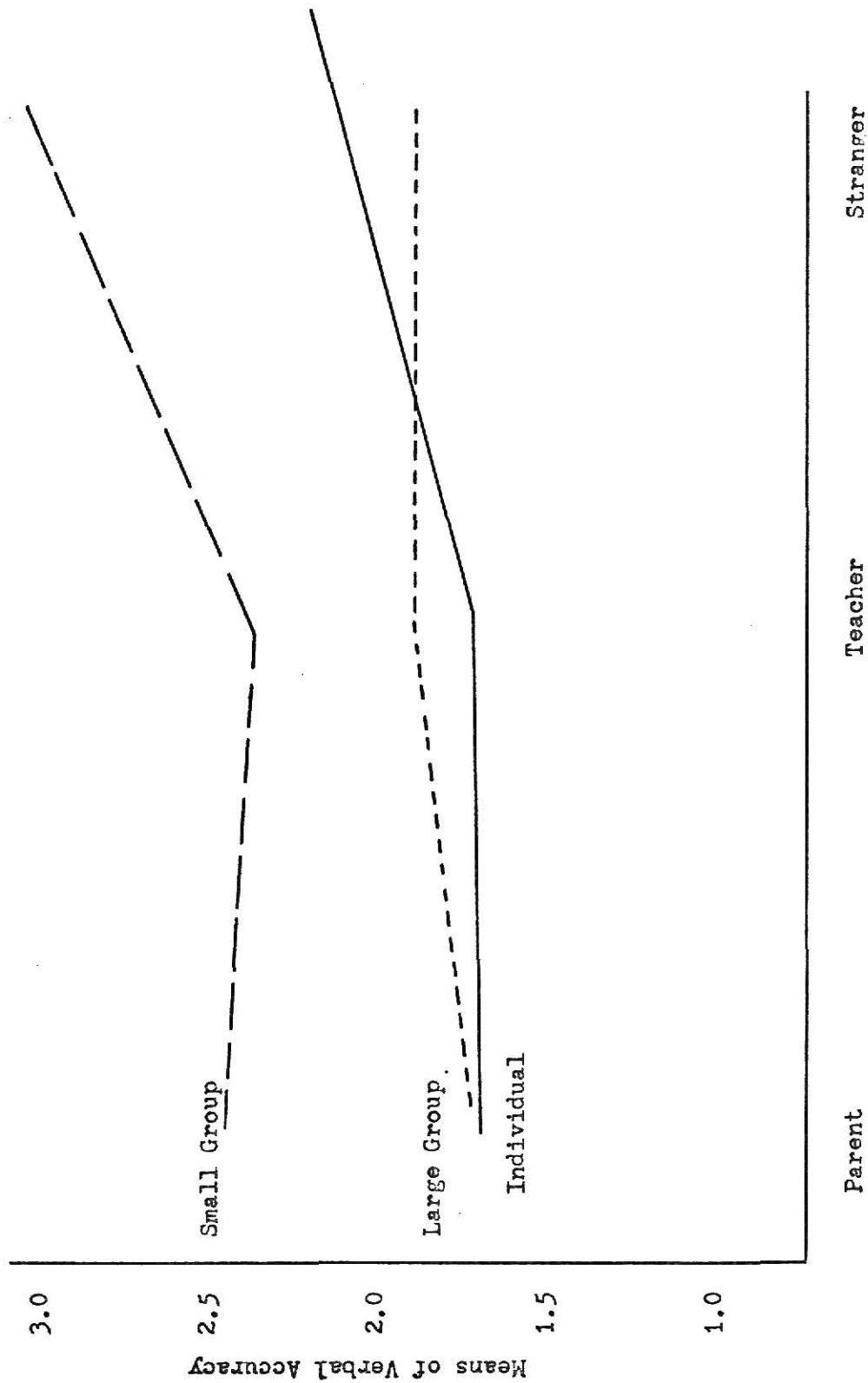
**THIS IS AS
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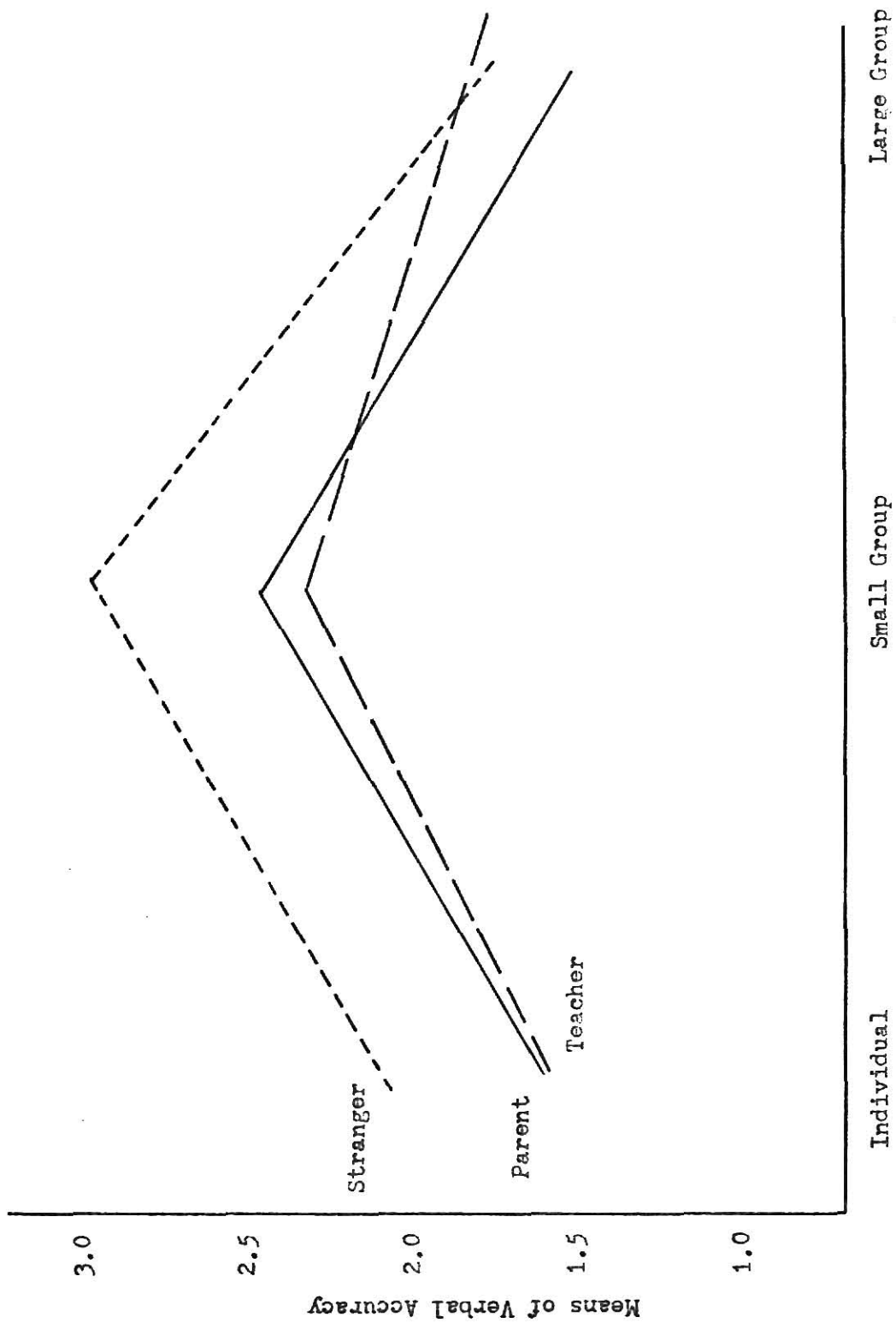
Graph 1. Factor One - Relationship - vs. Means of Sum Difference



Graph 2. Factor Two - Complexity of Social Situation - vs. Means of Sum Difference



Graph 3. Factor One - Relationship - vs. Means of Verbal Accuracy



Graph 4. Factor Two - Complexity of Social Situation - vs. Means of Verbal Accuracy

CHAPTER FIVE

DISCUSSION AND METHODOLOGICAL PROBLEMS

"Roam on! The light we sought is shining still,
Dost thou ask proof? Our tree yet crowns the hill,
Our Scholar travels yet the loved hillside."

- Matthew Arnold

Several difficulties arise particularly as a result of the graphs. The graphs suggest that both factors are not ranked correctly. If the original ranking which was based on the definition of the factor is inaccurate this calls the whole definition into question. The first factor was termed relationship and defined and ranked according to the amount of knowledge the three types of persons should have of the child's personality. Looking at the results in an ex post facto manner it would seem that a smoother ranking of factor one would be: teacher, parent, stranger. This ranking is one that would be used if knowledge of the specific physical environment of the situations, i.e., the nursery school, was used. This does not negate the influence of the knowledge of personality since statistical results were shown using that original factor. It does, however, bring in the redefined factor as a confounding influence. The experimental design failed to separate the two definitions of the factor. The difficulty with the second factor was not definitional but operational. Observation of the outcomes of the situations shows that the large group situation, standard for

seven of the eight children, did not involve all the possible interactions. The outcome of the large group was a song period and the children, instead of operating as a group of seven, interacted in subgroups of two and three. The action in the subgroups completely negated for some the action of the large group. The predictors generally anticipated this and based their predictions accordingly. The first segment or preview of the large group situation was considerably longer than for most of the small group situations. This increased time of observation before prediction contributed to the increase in accuracy of the large group over the small group. In addition, an analysis of the twin situations showed there was a possible practice effect acting. Since the large group situation was presented last for each child, the prior exposure to the earlier previews increased the accuracy of the personality model as well as the environment model and consequently, later prediction will be more accurate only because of its position.

The qualitative content aspects of the verbal predictions bears an interesting relationship to the personality-environment question. The content of the stranger's predictions usually consisted of short statements of behavior with little explanation of the basis of prediction. The predictions of the parents were more involved and used considerable reference to past behavior particularly in the home situation. "At home he has . . ." was a common phrase in the parent's prediction. This also helps to explain the high correlation between regularity of behavior and accuracy of prediction. The predictions by the nursery school teacher were usually involved and often several predictions

were made for the same situation. Each part prediction was dependent on a particular action by someone else in the environment. "If the teacher does . . . , then If she . . . , then" statements were common for the nursery school teacher and non-existent for the other predictors. It seems the parents predicted mainly on the basis of personality and past behavior. The nursery teacher predicted mainly on the basis of social environment. The strangers guessed from what little information they could glean from the previews. Of the two basis, personality and environment, it would seem that environment produced more accuracy on the scale predictions and about equal accuracy on the verbal. The nursery school teacher's accuracy was due as much to predicting the behavior of the significant persons in the environment as in predicting the child's behavior itself. The teachers might have had some aid in the use of the scale predictions by their earlier theoretical training which might have covered the very same scales used here. On the verbal predictions, the teachers were somewhat penalized in the statistical treatment because more of their predictions were placed in the second level of accuracy since they tended to predict multiple outcomes of which one would be right.

The preliminary nature of this research precludes any sweeping statements. It does, however, suggest a lot of questions. If the parents were more aware of the specific environments of their child would they be able to predict better? Is knowing your child as important as knowing where he is? Many "My daughter's a good girl," statements have been negated by a dark room. Of course the parent quizzing the teenager, "Where have you been all night?", is well aware that

knowledge of the personality itself is not important. How far can this emphasis on environment go? The world is not a Skinner box. The situations used in this experiment were very mild and non-traumatic. As one of Greenstein's (1970) points indicates, the personal variant may be less active in this non-demanding type of situation. When it gets bad though, there may be more Job's than the Devil imagined.

"Yea, though I walk through the valley of the
shadow of death, I will fear no evil . . ."

- Psalms 23:4

"'Contrariwise,' continued Tweedledee, 'if it was
so, it might be; and if it were so, it would be:
but as it isn't, it ain't. That's logic.'"

- Lewis Carroll

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APPENDIX A

Response Rating Scales (Circle Appropriate Number)

Activity Level - Speed of motor actions

| | | | | |
|----------------------|---|--|---|-----------------------------------|
| 1 | 2 | 3 | 4 | 5 |
| Very slow (creeping) | | Regular movement neither fast or slow (regular walk) | | Very fast move- ment (running) |

Rhythmicity - Degree of regularity in actions

| | | | | |
|--|-------------------------|---------------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 |
| A behavior that hasn't occurred before | Rarely acts that way | Sometimes he'll act that way | Usually acts that way | Always acts like that |

Rating Scales, Page 2

Approach or Withdrawal - Towards or away

| 1 | 2 | 3 | 4 | 5 |
|----------------------------------|------------------------------|------------|---------------------------------|---|
| Withdraws (Runs away or ignores) | Withdrawal but some approach | Indecision | Approach but slight with-drawal | Approach (Runs toward or fearlessly involved) |

Adaptability - How good is response to attain desired end

| 1 | 2 | 3 | 4 | 5 |
|--|---------------------------------------|----------------|-------------------------------------|---------------------------------------|
| Unadaptable (Wants something but be-haves inefficiently) | Almost but not quite gets desired end | No desired end | Obtains end but has some difficulty | Highly adaptable (Attains end easily) |

Rating Scales, Page 3

| Intensity of Reaction - Non-motor energy content of response | | | | |
|--|---------------|----------------------|--------------------|---|
| 1 | 2 | 3 | 4 | 5 |
| No intensity (apathy) | Mild reaction | Moderate reaction | Strong Reaction | Very strong reaction (Extreme hate or love) |

Threshold of responsiveness - Will he notice the situation

| 1 | 2 | 3 | 4 | 5 |
|--|------------------------------|------------------------------|--|--------------------------|
| Threshold very high, situation not strong enough to cause a reaction, he's unaware | He just barely noticed it | He will react normally | Situation will cause a reaction, he's sensitive | He's overly sensitive |

Rating Scales, Page 4

Quality of mood - Pleasant vs unpleasant

| 1 | 2 | 3 | 4 | 5 |
|-----------------|-------------|------------------|----------|---------------|
| Very unpleasant | Unpleasant | Neither pleasant | Pleasant | Very pleasant |
| loud crying | some crying | nor unpleasant | happy | Very joyful |
| very unfriendly | Unfriendly | or no response | friendly | Very friendly |

Distractibility - How easily is he distracted from his response by other stimuli

| 1 | 2 | 3 | 4 | 5 |
|-----------------|---------------|-----------------|------------|------------------|
| Response easily | Distracted by | Normal distrac- | Distracted | Will not be |
| distracted by | mild stimulus | tibility or no | only by | distracted no |
| other things | | distraction | strong | matter what else |
| | | present | stimulus | happens |

Rating Scales, Page 5

| Attention Span or Persistence - How long will he continue in his response on his own | | | | |
|--|--|--|-----------------------------|------------------------------|
| 1 | 2 | 3 | 4 | 5 |
| Very short (Quickly go to something else) | After short time will change inter-est | Normal persistence or not ended by him | Somewhat longer than normal | Very long (He'll keep at it) |

APPENDIX B

| | Parent | Teacher | Stranger | \bar{X} of Dimension Two |
|-------------|--------------------------------|--------------------------------|--------------------------------|----------------------------|
| Individual | Observed (n = 24) x = 66 | Observed (n = 24) x = 36 | Observed (n = 24) x = 58 | |
| | Expected x = 42.5 | Expected x = 36 | Expected x = 50.5 | $\bar{X} = 6.66$ |
| | Observed Mean = 8.25 | Observed Mean = 4.25 | Observed Mean = 7.25 | |
| Small Group | Observed (n = 24) x = 73 | Observed (n = 24) x = 56 | Observed (n = 24) x = 90 | |
| | Expected x = 58 | Expected x = 49.3 | Expected x = 69.1 | $\bar{X} = 9.12$ |
| | Observed Mean = 9.13 | Observed Mean = 7.0 | Observed Mean = 11.2 | |
| Large Group | Observed (n = 24) x = 52 | Observed (n = 24) x = 70 | Observed (n = 24) x = 79 | |
| | Expected x = 53.3 | Expected x = 45.3 | Expected x = 63.4 | $\bar{X} = 8.36$ |
| | Observed Mean = 6.5 | Observed Mean = 8.76 | Observed Mean = 9.88 | |
| | $\bar{X} = 7.95$ | $\bar{X} = 6.75$ | $\bar{X} = 9.45$ | |

TABLE I. CHI SQUARE CALCULATION TABLE WITH CELL ROWS AND COLUMNS FOR SCALE PREDICTIONS

df = 4

χ^2 9.49 or greater significant at .05 level

computed $\chi^2 = 10.05$

APPENDIX C

DIMENSION TWO - SOCIAL COMPLEXITY

| | Parent | Teacher | Stranger | \bar{X} of Dimension One |
|-------------|----------------------|----------------------|----------------------|----------------------------|
| Individual | Observed (n = 24) | Observed (n = 24) | Observed (n = 24) | |
| | Expected | Expected | Expected | $\bar{X} = 1.79$ |
| | Observed Mean = 1.62 | Observed Mean = 1.62 | Observed Mean = 2.12 | |
| Small Group | Observed (n = 24) | Observed (n = 24) | Observed (n = 24) | |
| | Expected | Expected | Expected | $\bar{X} = 2.62$ |
| | Observed Mean = 2.5 | Observed Mean = 2.38 | Observed Mean = 3.0 | |
| Large Group | Observed (n = 24) | Observed (n = 24) | Observed (n = 24) | |
| | Expected | Expected | Expected | $\bar{X} = 1.79$ |
| | Observed Mean = 1.62 | Observed Mean = 1.87 | Observed Mean = 1.87 | |
| | $\bar{X} = 1.92$ | $\bar{X} = 1.96$ | $\bar{X} = 2.34$ | |

TABLE II. CHI SQUARE CALCULATION TABLE WITH CELL ROWS AND COLUMNS FOR VERBAL PREDICTIONS

df = 4

χ^2 9.49 or greater significant at .05 level

computed $\chi^2 = .374$

WHO IS HE? WHERE IS HE?: A PRELIMINARY SEARCH OF THE
IMPORTANCE OF PERSONALITY AND ENVIRONMENT IN PREDICTION

by

CHARLES ALAN BARRETT, 2ND

B. A., Johns Hopkins University, 1965

A MASTER'S THESIS

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Manhattan, Kansas

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Major Professor

The subjects for this study were eight four and five year olds attending the Child Development Laboratory at Kansas State University. The subjects were videotaped during the course of several days of nursery school. From the running videotape three types of situations were extracted for each child. The situations were defined according to Barker's definition of a behavioral episode. In addition, the situations contained a climax or point after which behavior could vary. The behavior after the climax was predicted by three persons. These predictions were compared to the behavior that actually occurred.

A 3X3 table was used for the main statistical analysis. The independent variables were termed relationship and complexity of social situations. The first variable called factor one was related to knowledge of the personality of the child used in the situation. The three levels of the first factor were the three predictors: the child's parents, a nursery school teacher, a stranger. The parents had the greatest knowledge of the child's personality and were in part responsible for the child's personality structure. Thus the parents would be more accurate in predictions based on model building and "as if" projection than the other two predictors. The teacher possessed a theoretical knowledge of children and could build a general model. The stranger had no knowledge of the children or the nursery school. The second variable or factor two was related to the complexity of the environment, in this case the social environment. The three situations were ranked according to this variable. The first and least complex was the child acting alone. His personality would be more active in the first situation as a determiner of behavior than in the second

situation in which the child interacted with one or two others. The last situation was the child in a large group. The table was used for two different dependent variables. The first analysis shows, as a dependent variable, the sum of the difference between the predicted behavior and the actual behavior in each situation as rated by the same predictor on nine behavior trait scales. The second analysis consisted of an accuracy measure of the verbal predictions on each situation as a dependent variable.

The statistical analysis of the two tables and a graphical analysis of the means indicated that both factors as defined or operationally used were not pure. Although the scaled predictions had means that differed beyond the .01 level, the values of the means and the slopes of the graphs were not as anticipated by the factor rankings. The verbal predictions had a very similar graphic pattern but the table values were not significant. The results suggested that factor one could best be defined as knowledge of the specific physical environment of the nursery school with a greater to less ranking of predictor: teacher, parent, stranger. Factor two suffered from an operational difficulty; the large group situation could have been used as a number of non-interacting small group situations. According to the scale predictions of the parents and how usual they thought the actual outcome behavior of their child was, parents predicted on the basis of past behavior. Content analysis of the verbal predictions showed the parents used considerable references to past behavior. The teachers used considerable reference to the other persons in the situation, and the stranger gave few explanations making short statements of behavior.