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A STUDY OF SOME FACTORS IN THE BENDER GESTALT REPRODUCTIONS OF WELL ADJUSTED AND POORLY ADJUSTED BOYS WITH PARTICULAR EMPHASIS UPON THE INTERPRETATIVE PROCESS

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

In 1938 Lauretta Bender's work on visual motor perception culminated in the publication of her manual "A Visual Motor Gestalt Test and its Clinical Uses" (Bender, 1938). In this publication an introduction of an instrument to the medical and psychological fields was presented as a quick and simple means of estimating perceptual maturity and diagnosing organicity, retardation and functional pathology. The Bender Gestalt tes+, frequently referred to as the B-G or simply Bender, is a paper and pencil test consisting of nine simple geometric designs drawn on four inch by six inch white cards which the subject is asked to reproduce. The test figures, much of its theoretical rationale and interpretation are a direct outgrowth of Gestalt psychology, and in fact, the stimulus designs are the same as those employed by Wertheimer in his classical studies on perception of the gestalt. It was not until 1946 that standardized test cards and a manual of instructions were made available by the American Orthopsychiatric Association (Bender, 1946, p. 9). Prior to the availability of the test cards, however, the Bender Gestalt test was

beginning to find much popularity among clinicians who needed a relatively simple diagnostic test as an adjunct to the available instruments. Up until World War II work with the test was employed primarily to elucidate the various kinds of responses characteristic of patients suffering from mental defect, specific brain pathology, psychosis and neurosis. At this stage in the use of the Bender Gestalt, analysis of performance was characterized by adherence to gestalt principles and relatively little attention was paid to the mechanism of projection as it operated in the testing situation. However, the demands of the War stressed the need for a simple instrument which could assist the clinician in distinguishing between pathological conditions and determining whether there was any psychological evidence of insult to the brain. In addition, due to the many educational and language problems common among the soldiers, there was a strong need for psychological tests which could be offered without the limitations posed by deficiencies in language and educational proficiency. Hutt (1953, pp. 665-668) felt the Bender Gestalt could be employed to serve these purposes. He was greatly impressed with the significance of projective material that occurred in the copying of the Bender designs as well as in the verbal comments expressed by the subject during and following his performance. Hutt, after much clinical experience and research with the Bender Gestalt, developed a technique for evaluating Bender performance in terms of the basic theory of projection and

in 1945 published his tentative manual for the Revised Bender Visual Motor Gestalt Test. Hutt has continued to work on the projective use of the Bender and has recently published a manual which describes the development and clinical use of his technique (Hutt, 1960).

One of the advantages of the Bender Gestalt test lies in the fact that it may be interpreted in several different ways. Bender used a developmental and clinical approach in her interpretation of the responses of children and adults. Hutt introduced the projective use of the test via interpreting the drawings of Bender designs in line with psychoanalytic theory (Hutt, 1945, p. 134; 1953, p. 662; 1960, p. 32; Halpern, 1951, p. 325; Kitay, 1950, p. 170). Many clinicians have used the Bender globally to gain general impressions of the subject's performance in a standardized situation (Koppitz,1964, p.66). This procedure, however, presented many problems in that there tended to be low reliability between clinical judgments. In an attempt to standardize interpretations a number of quantitative scoring systems of Bender Gestalt reproductions have been developed (Billingslea, 1948; Pascal & Suttell, 1951; Koppitz, 1964). Most of the work on standardization and quantification of the test has been accomplished with adults. However, some systems have been developed exclusively for children (Koppitz, 1964) and most of the available systems may be validly used with younger subjects. Bender herself incorporated a table of responses for each year of age from three through eleven and some typical adult responses. In order to use this system the

experimenter compared his subject's protocol with the table and thus obtained a suggested Mental Age level (Bender, 1938, p. 132). Keller was first to report modifications of Bender's scoring system, however, there is no published full account of this system (Billingslea, 1963, p. 235). Hutt (1960, p. 51-72) developed a system which presented a framework for his projective interpretation of the test that consisted of 25 scoring factors to which were attributed psychodynamic and diagnostic characteristics. In 1948 Billingslea presented his monograph which contained an objective scoring system. Following the work of Bender and Hutt, Billingslea selected 38 factors using 137 indices to score them. Two years later Pascal and Suttell published their manual. These experimenters settled on 105 factors and presented numerous reproductions of actual B-G records to assist the scorer in determining whether a specific deviation was present in a particular protocol. In this system each factor is given a numerical value. The sum of the values of the factors judged to be present in each of the designs (omitting Design A) plus the sum obtained for the configurational factors represents the total raw score. Standard score conversion tables are available, however, only for adults. The pertinent literature reveals this scoring system to be a highly valid one and to be the most widely used scoring system on the Bender Gestalt today (Addington, 1952; Kleinman, 1955, p. 62; Bowland & Deabler, 1956; Byrd, 1956, pp. 135-136; Tamkin, 1957; Simpson, 1958, p. 55; Clawson, 1959, pp. 205-206;).

Koppitz (1964) recently published the Developmental Bender Scoring System which is a publication that describes a quantitative scoring system consisting of 30 mutually exclusive scoring items for children between the ages of five through ten years. Koppitz' system, although developed exclusively for children, consists of many of the items found in Pascal and Suttell's system which is applicable to adults as well as children. The experimental research, in addition, suggests that the Bender test along with a quantitative scoring system is a useful and valid instrument for studying the visual motor process in children, as well as more global personality characteristics (Byrd, 1956, pp. 135-136).

By now the Bender Gestalt is one of the most widely used psychological tests. Since 1946 when the B-G cards and manual were made available, more than 130 books, papers and experimental investigations dealing with the Bender Gestalt have appeared (Koppitz, 1964, p. 48). In 1961, Sundberg conducted a survey on the practices of psychological testing in clinical services. Of the 185 hospitals and agencies which took part in this survey, 158 indicated that they employ the Bender Gestalt to some extent. This instrument, in fact, was placed right after the Rorschach, Draw-a-Person, and Thematic Apperception Test. Between 1946, then, when an earlier survey was undertaken and 1958 the Bender Gestalt Test has risen from fifty-fourth place to fourth place in the order of tests most frequently employed by clinical psychologists (Koppitz, 1964, p. 3).

This increased use of the test as a clinical diagnostic instrument for adults and children has provided the field with much valuable information. At the same time the increase in popularity has brought to the fore many questions that remain to be answered. This is particularly so as regards the performance of children and the entire area of what the Bender Gestalt designs mean to the individual.

Bender Gestalt Theory and Review of the Literature

The theory underlying performance on the Bender Gestalt Test depends to a considerable extent upon Gestalt psychology. Adhering strictly to this orientation, then, would necessitate interpreting a Bender protocol in the light of Wertheimer's fixed and established rules for perception of the "gute gestalt", such as, proximity, continuity, similarity, and inclusiveness. Definite dynamic concepts, however, have supplemented this traditional gestalt tenet of total reaction to total situation. Thus, not only is there consideration of what and how the individual perceives, but much emphasis is placed on the way in which the perceptions are used. In perceiving the individual organizes the stimuli with regard to his unique experiences, his present state of affairs, both physical and mental, and his future aspirations. In discussing this broader view of Gestalt Psychology, one notes that Paul Schilder expanded this view by adding dynamic concepts to the more traditional and static gestalt tenets. In the introduction to Bender's original

monograph (1938) Shilder stated that:

> There are not only Gestalten but 'Gestaltung,' signifying that the organism in the act of perception always adds something new to the experienced perception . . . The organism does not react to single local stimuli by single responses but by a total process which is the response of the whole organism to the total situation.

In the act of perceiving the gestalt the individual contributes to the configurations. The final gestalt, as it is reflected in Bender performance, for example, is made up of sensory reception, interpretation, and motor reproduction. Bender herself states that:

> . . . the final product of the Bender-Gestalt is a visual motor pattern which reveals modifications in the original pattern by the interpreting mechanism of the individual who has experienced it. The whole setting of the stimulus and the whole integrative state of the organism determine the pattern of the response (Bender, 1938, pp. 3-4).

Thus, Bender appears to be saying that gestalt patterns are the experiences of an individual and that the final configuration is not merely a question of perception, but a question of personality as well. Furthermore, she states that since the pattern of response is determined by the integrative state of the perceiver and the whole pattern of the stimulus, any deviation in the total organism will be reflected in the final sensory-motor pattern in the response to the given stimulus configuration. Hence, . . . "this pattern of action may be expected to vary in different maturation or growth levels and in pathological states organically or functionally determined (Bender, 1938, p. 5). This expectation was borne out as a

result of Bender's many investigations on visual motor behavior. In essence Bender's work led her to conclude that brain injured, psychotic and mentally retarded individuals are not capable of organizing perceptual patterns with the same degree of maturity and veridicality as are individuals free from brain injury, emotional disturbance (psychosis) and mental retardation (Bender, 1938, p. 84).

With respect to the performance of children responding to the B-G Test, Bender noted a developmental quality which was a maturational process rather than an imitative or educational one (Bender, 1938, pp. 26-35). To support this view, Bender summarized an investigation conducted by Nissen in which he compared the drawings of designs similar to the B-G designs done by Negro American and African children. Bender stated that the drawings of both groups showed very similar features and it could be concluded that a native child having no formal education and no previous experience with paper and pencil may produce copied forms with relatively the same facility as an average American born and educated child.

Bender also makes available material in which she summarizes her work on the maturational aspect of visual motor development. She presents a table which indicates the ages at which one might expect children to successfully execute each of the nine Bender Gestalt designs (Bender, 1938, p. 132). The table shows that the test is most useful for children between the ages of four and eleven years of age. Below the age

of four years visual motor behavior has not matured to a sufficient degree to successfully copy the stimulus designs and by the age of eleven it is expected that the child successfully copy all of the designs.

Billingslea states that the Bender Gestalt Test was built on the assumption that accurate visual motor perceptual behavior is a skillful act involving three stages. He writes:

> This skillful perceptual act is considered to involve (a) sensory reception, (b) central neural interpretation, and (c) motor reproduction (hand drawing) by the perceiving subject of the stimulus objects. This premise goes further and states that this total perceptual process can be distorted by neural injury, by variations in intellectual level, and by maladjustments in the emotional organization of the perceiving subject (Billingslea, 1948, p. 1).

The above statements by Bender and Billingslea lay the foundation and rationale for an understanding and interpretation of an individual's performance on the Bender Gestalt Test. Their work leads to the conclusion that the copying of the Bender designs involves three interdependent phases: (1) sensory perception - the ability to perceive the designs in a veridical manner, (2) interpretation - the particular meaning(s) each of the designs evoke in the perceiver, and (3) motor reproduction - the ability to copy or reproduce the designs. Pascal and Suttell more than any other investigators involved in the nature of Bender Gestalt performance discuss and elaborate these basic assumptions by noting that:

> . . . on a task such as copying B-G designs performance would not only be a function of the individual's capacity to perceive correctly and execute the figures

> but also of the individual's interpretation of them, i.e. what they and the task mean to him in the light of his own experience. (Pascal and Suttell, 1951, p. 6).

These investigators go on and note " . . . that if we accept as given the ability to perceive and execute the designs, deviant performance should, then, be a function of the interpretative factors which obtrude between perception and execution," (Pascal & Suttell, 1951, p. 6). Pascal and Suttell conclude that something other than the ability to perceive and reproduce the Bender designs is being evaluated via the use of their scoring system of the Bender Gestalt Test when used with individuals of normal intelligence (p. 8). This "something other" has been related to the way the perceiver experiences the gestalt designs and/or to a factor that seems best described as an attitude.

> The test situation for the individual, once he is subjected to it, becomes a bit of reality with which he has to cope. We would expect, therefore, that in those persons in whom the attitude toward reality is most disturbed, we will find greater deviations from the stimuli. Our findings corroborate this expectation. In the population tested by us, of normal intelligence and free from brain damage, the greatest number of deviations were found in psychotic subjects, fewer in psychoneurotic subjects, and least in non-patients. . . Deviations from B-G stimuli in our scoring system run from faithful reproductions with low scores to extremely deviant reproductions with very high scores. This continuum is correlated with a progression from less to greater psychological disturbance (Pascal & Suttell, 1951, pp. 8-9).

A paucity of experimental research has been conducted to validate the assumptions concerning the nature of performance on the Bender Gestalt Test and the validity of the three

interdependent phases. Among these few investigations is an unpublished doctoral dissertation conducted by Kleinman (1955). He concerned himself with trying to show that deviations in Bender performance by normal and schizophrenic adults could be ascribed to the ways these two groups of subjects interpreted the Bender Gestalt figures. Kleinman was able to demonstrate via his comparative study that normal and schizophrenic adults differ in the interpretative phase of the Bender Gestalt but not in the perceptual phase. Thus, he concluded that the Bender designs were perceived without difficulty and, therefore, deviant reproductions could be assigned to interpretative factors which obtrude between perception and reproduction.

Niebuhr and Cohen (1956) conducted a study in which they attempted to investigate the component of visual discrimination to performance on the Bender Test. The authors comment that the majority of work in evaluating the functions measured by the Bender Test has placed primary emphasis on the visual motor function per se and has tended to disregard delineating the locus of distortion one finds in the reproductions of subjects of varying degrees of psychological integrity. These authors raised the question whether patients perceive the Bender designs accurately and then distort them in reproduction or whether they actually misperceive the designs and then more or less accurately reproduce their misperceptions. In order to answer this question ten chronic schizophrenics, ten acute schizophrenics, ten hospitalized neurological patients and ten

student nurses were asked to reproduce the B-G designs from memory. The subjects were then presented the designs and asked to reproduce them as exactly as possible. The third phase of the study made use of nine sets of designs (one set for each figure) which varied in degree of similarity to the standard Bender stimuli. The subjects were requested to select from among each set of six alternatives each standard design from memory. The final task required a matching task of the subject. With each standard Bender design before the individual, the subject was told to select the correct design from the same series of six alternatives used in step three by matching each alternate with the standard Bender Gestalt design. The authors found consistent differences among the groups in their adequacy of reproduction. They also concluded that perceptual efficiency, for example, visual discrimination, decreases with severity of psychopathology. They note that the adequacy of motor reproduction likewise decreases with severity of psychopathology, but that the nature and extent of the relationship between these two variables remains unresolved. Hence, it appears, at least from these conclusions, that Pascal and Suttell's assumption regarding the given nature of ability to perceive and execute the B-G designs is questionable.

Contradictory results are reported in a recent study conducted by Stoer, Corotto and Curnutt (1965). These investigators note that ". . . the relationship between visual (perceptual) and motor components of the task remains uncertain" (p. 473). There is yet no definite work which allows

one to assign distortions to any particular function or combination of functions. Distortions may result from (1) misperception, (2) faulty reproduction or copying, (3) disturbances of the integrative function, or (4) a combination of all of these (Stoer et al, 1965, p. 474). In order to better understand the nature of Bender performance the authors devised an experimental procedure somewhat similar to the one used by Niebuhr and Cohen (1956) which attempted to operationally tap the various phases of Bender Gestalt performance. Four equal groups of subjects matched for sex, age and intelligence and diagnosed as acutely schizophrenic, chronic schizophrenic, organic (no psychotic symptoms) and normal were employed. Each subject was asked to copy the Bender Gestalt designs on four inch by six inch white cards. When the subject completed a drawing it was placed among six deviant reproductions of the design and one almost identical reproduction of the Bender stimulus. This was done for each of the nine figures. The subject was then requested to select the card with the design most like the original Bender Gestalt and the card least like the B-G stimulus. The subject then ordered the last six cards from most like the Bender to least like it. The authors viewed the reproduction score (obtained via the Pascal and Suttell system) of the subjects' protocols to be the motor component of the task and the matching or ranking score as a measure of the perceptual component. The findings of the study were in line with Pascal and Suttell's assumption in that they found

no differences among the four groups with regard to their perceptual discrimination of the B-G designs. They did, however, find significant differences between the four groups in reproduction of the Bender figures. Since there was no statistically significant difference in the perceptual task the differences in reproduction could be assigned to factors other than visual perception. These differences appear, then, to be assignable to defects in motor and/or integrative functions. Unlike Niebuhr and Cohen (1956) Stoer et al concluded that perceptual efficiency seems only minimally affected as regards Bender Gestalt performance regardless of degree and kind of pathology (1965, p. 477). The contradictory results that perceptual efficiency and adequacy of motor reproduction decreases with severity of pathology may be due to design and methodological differences as well as a lack of rigorous sample controls in the Niebuhr and Cohen study.

The investigations thus far discussed lend some support to the assumption that deviant Bender Gestalt performance may be directly related to the integrative state of the perceiver. Hence, we have some evidence which suggests that one may describe Bender performance as reflecting a continuum of the subject's degree of psychological integration or ego strength, for example, one would expect the least amount of deviant performance in non-patients, greater deviations in neurotics, a still greater frequency of deviation in psychotics, and the greatest number of deviations in organics. There is not,

however, enough material or shared interpretation which will allow one to ascribe deviant Bender Gestalt performance precisely to the integrative state of the organism. There does appear to be some support for accepting the assumption that the ability to perceive the Gestalt designs is similar among various groups of subjects, but this assumption needs additional verification. There is in addition, practically no work which deals with the motor functions of Bender Gestalt performance. In order to successfully ascribe deviant Bender performance to the interpretative process which obtrudes between perception and motor behavior it must first be reliably demonstrated that the ability to perceive accurately and the ability to copy geometric figures is not significantly different among different groups of subjects. With the demonstration of such findings it becomes more feasible to ascribe errors in reproduction of the Bender Gestalt figures exclusively to the interpretative process.

The only reported study which attempted to evaluate all three phases of Bender Gestalt performance is an unpublished doctoral dissertation conducted by Simpson in 1958. Using normal and emotionally disturbed first grade boys of average intelligence Simpson proposed to investigate the contentions of Pascal and Suttell that three factors are involved in the reproduction of Bender Gestalt designs, namely, perception, interpretation, and motor repeoduction, and that deviant performance in Bender Gestalt reproductions could be assigned to interpretative factors.

In order to show that the two groups of subjects were similar in copying ability the investigator requested his subjects to copy four simple geometric figures hypothesizing that no significant statistical differences in copying ability would exist. Following this task each subject was given the Bender Gestalt Test according to standardized instructions with the exception that each design was to be executed on separate four inch by six inch white cards. The Bender protocols were scored according to the Pascal and Suttell Scoring System, however, since separate cards were employed the configurational scores could not be used. Finally, Simpson presented each subject with a series of Bender stimulus cards and asked him to "Choose the one which is the same as the one you were shown to copy" (p. 18). This series included a replica of each of the standard Bender stimulus designs and three additional replicas of each design each showing a greater degree of distortion from the standard stimulus. Thus, nine stimulus sets of four designs each were administered to every child. Using this technique Simpson found that there was no statistically significant difference between normal and emotionally disturbed boys in their ability to copy the geometric designs and in their ability to perceptually discriminate the Bender Gestalt designs accurately. He did, however, find that the two groups differed significantly in their reproductions of the Bender designs as scored by the Pascal and Suttell Scoring System. Hence, Simpson concluded that the deviations in reproducing

the Bender Gestalt could be assigned to interpretative factors which obtrude between the ability to see and reproduce the designs. Simpson further concluded that these results offered validity as to the basic assumptions of Pascal and Suttell.

On the basis of Simpson's study it appears possible to assign deviant reproduction of Bender Gestalt designs specifically to interpretative functions. However, this investigation is the only reported study to date which allows one to accept such a statement and this acceptance must be limited because of a serious methodological error. During the perceptual phase of the study Simpson did not present the original Bender stimulus along with the replicas of it, but rather had his subjects select the design most like the standard stimulus from memory. This task, then, is not one of perceptual discrimination alone but one involving a memory component. This memory factor may very well have affected Simpson's findings to an unmeasurable degree. In addition, Simpson presents no rationale for having his subjects copy the designs on separate cards. Using such instructions prevented Simpson from using Pascal and Suttell's configurational analysis. This phase of the scoring system has been related to planning and organizational abilities which in turn are related to ego strength, a manifestation of the integrative state of the organism. While these weaknesses in Simpson's study limit the acceptability of his results the extent of their seriousness is not known. It does appear that Pascal and Suttell's

assumptions have received some supportive evidence, but there is certainly ample room for further research and validation. An endeavor to rectify the discussed errors in Simpson's investigation will be attempted as part of this study along with an analysis of the nature of the interpretative process.

The projective testing movement in clinical psychology came at a point at which psychology and education were calling for instruments that would help them understand the individual as he perceives himself and the world around him. With the publication of Hermann Rorschach's Psychodiagnostics (1942) a new and unique type of clinical instrument was made available to the field. Very briefly, this new projective instrument consisted of ten ambiguous inkblots which were presented to the subject in a standardized way. The subject was asked to express what these blots reminded him of and what about the blots helped him reach his conclusions. It was assumed that the individual projects on to these blots those percepts, needs and desires that are most characteristic of him as a unique individual. Since there are no correct or incorrect responses, the person can only respond in a way that is revealing of him as an individual. As the use and value of the Rorschach and projective testing in general became known to clinicians new instruments were designed whose purpose it was to obtain an evaluation of the total individual. Dr. Bender did not actually conceive of her instrument as a projective device. She felt the test would assist in making gross differential diagnoses,

but that it would not be useful in understanding the more subtle nuances of personality and personality maladjustments such as neuroses, for these did not typically manifest perceptual disturbances in the visual motor sphere (Bender, 1938, p. 35). However, while Bender did not conceive of the B-G as a method of personality assessment she did consider the performance to be based upon the response of the integrated organism, and there appears to be no denying the relationship between what is called personality and the integrated organism (Rabin & Haworth, 1960, p. 320).

Max Hutt is perhaps the most instrumental clinician and researcher responsible for work on the projective use of the Bender Gestalt Test. In discussing the test, Hutt notes that it falls into the category of "partially structured personality tests" (1945, p. 136). This category includes the assessments of personality in which the test stimulus remains relatively structured, but the subject may respond in a relatively free and unique manner. He notes that the test material is generally recognized by the subject and interpreted by him, insofar as primary or superficial perceptions are concerned, in a fairly uniform way. However, these responses also reflect certain aspects of the subject's personal needs since their responses are not restricted to any designated alternatives. Hutt further states that "Since this type of test invites, and in fact requires, the interaction of the subject and the stimulus material, it presumably is influenced by the

subject's personality" (p. 136). Because the ways, then, in which an individual perceives, organizes, and executes responses to this task maximizes the projective aspects of his behavior, this test offers leads as to projective hypotheses about the individual.

The use of the Bender Gestalt as a projective test has raised many questions concerning the meaning(s) the nine Bender designs tend to elicit in individuals. Clinicians have stressed the need for such data based upon the clinical axiom of the relationship between environmental stimuli and behavior. Thus, in order to interpret a test protocol effectively information concerning the test stimuli is as important as information regarding the particular subject. In order, then, to better understand the process and nature of Bender Gestalt performance studies on the meaning of the test stimuli have become popular (Suczek and Klopfer, 1952, pp. 62-65; Hammer, 1954, pp. 335-338; Greenbaum, 1955; Tolor, 1957, 1960; Schulberg and Tolor, 1962, p. 458; Guertin and Davis, 1963).

One area of research into the meaning of the designs has focused on the symbolic, particularly sexual symbolic, properties of the test figures. These studies generally base their rationale on psychoanalytic theory. Briefly, this theory assumes the existence of symbols that are descriptions or things that stand for some other things. To Freud, the symbol is a sign causally connected with a forbidden thought that cannot force its way directly into consciousness. It

is a mode of expression which has never been individually acquired; it is a racial heritage which finds its roots in the early history of mankind (Fromm, 1951, pp. 46-52; Levy, 1954; Starer, 1955; Mullahy, 1955; Rodrique, 1956; Rycroft, 1956; Stein, 1957; Stennet, 1958; Arieti, 1959, p.912-920; Moos & Mussen, 1959; Dry, 1961, pp.18-40). Jung maintained the notion of the universality of symbolism, but added the thought that symbols are important in that they tell in disguised form of what is to come (Jung, 1916, pp.25-27; 1964, p.64; Progoff,1953, p.180). As Stein (1957, p.75) notes symbols do not reveal they merely hint. While there is difference of opinion as to precisely what the symbol is and how the process of symbolism operates in the personality, it is generally agreed that symbolic behavior is unconscious and that it carries affect from the object it represents.

The area of symbolism most widely discussed is that of sexual symbolism. Dating from Freud's work on symbolic behavior, particularly as manifested in dreams, there is the working hypothesis that certain environmental objects stand in a symbolic relation to the male and female genitalia. As originally elaborated by Freud, this symbolic relationship was based on certain structural or functional similarities between the symbol and the genital organ symbolized. Thus, elongated and pointed shapes and objects, such as sq uares, daggers, knives, poles, noses, et cetera were assumed to represent the male genitalia, while round, containing shapes and objects, such as circles, curves, boxes, key holes and houses were considered symbolic of the female genitalia.

The psychoanalytic hypothesis of sexual symbolism has gained wide and implicit acceptance and has become for many an integral part of the interpretation of projective materials ranging from figure drawings to the Bender Gestalt (Levy, 1954). Many clinicians have noted the possibilities of the symbolic significance of the Bender designs (Suczek & Klopfer, 1952, p. 65; Hammer, 1954, pp. 335-358; Pascal & Suttell, 1951, pp. 60-75; Hutt & Briskin, 1960, pp. 41-52; Tolor & Schulberg 1963, pp. 102-108) and in fact, Bender comments that certain gestalt forms could take on symbolic significance and representation (Hutt & Briskin, 1960, p. 85). Hutt (1953, p. 662) notes that the symbolic significance of circular versus linear or phallic figures is often a part of the subject's performance on the test in that it may be related to his unconscious defenses against the patterns of his perception of male and female figures.

An interesting study relative to this area of discussion is one conducted by Hammer in 1954. It was Hammer's most specific purpose to isolate Bender Gestalt indices suggestive of phallic sensitization, castration feelings and reactions to such feelings. The author studied twenty institutionalized males who underwent eugenic surgical sterilization based on the assumption that such patients would tend to react to such an operation with feelings of castration and twenty institutionalized males, all of whom underwent operations other than sterilization. The sample was very poorly matched, however, the author notes that he had to be content with the limitations in subject population provided by the enactment of

sterilization laws in the state of Virginia. Two sets of Bender Gestalt protocols were available; one that was administered upon admission to the institution and a second which the experimenter administered prior to surgery. Based upon an analysis of the pre-surgery and post-surgery test protocols, Hammer concluded that there was statistically significant evidence of indices of castration feeling (such as drooping or bent points, angulation problems, overemphasis of points) and castration threat (such as horizontal elongation of diamond). He also raised some hypotheses in the form of probability statements that require further investigation. Among these statements are the following: (a) Elongated figures on the Bender, such as points and extensions, appear to be susceptible of use as phallic symbols. Circles, in contrast, may be employed as vaginal symbols and feelings of femininity in the protocols of male subjects. (b) Virility strivings may become evident in the drawing of contact points whereby an impression of penetration is conveyed by the overlapping of two components of a figure at the point of contact. The point of crossing of lines on the B-G may reflect and mirror feelings of psychosexual insecurity. Such feelings may be further conveyed by the relative size given symbolic male (long and pointed figures) and female (round and enclosing figures) components of the gestalt. (c) It is in the drawing of these genital symbols that an individual may reveal his feelings of genital adequacy or inadequacy, and potency satisfaction or dissatisfaction in reference

to desired phallic size. The aforementioned may be seen via the manner in which the figures are drawn as bent, twisted, rounded, damaged, drooping, missing and/or reinforced.

The symbolic meaning, particularly sexual symbolic meaning, then, of the various B-G designs or parts of the designs may evoke certain feelings, threats, and attitudes in the subject that are then manifested in the final reproduction of the figures. Therefore, data on the symbolic nature of the Bender Gestalt designs may prove of value in understanding why a subject reproduced the stimuli in the way he did. Some of this data may be made available via the use of psychoanalytic theory and its assumption that certain symbols are employed so prevalently as to indicate that they have a universal meaning - a meaning only rarely modified by culture and personal experiences (Rodrigue, 1956, p. 152).

A second area of study into the meaning of the Bender Gestalt figures is concerned with the associative value of the test designs. Investigations which study the commonly evoked associations to the standard stimuli are generally based on the position that before formulating any interpretative scheme it is important to know the basic stimulus properties of the test material for " . . . people will perceive and associate to the Bender figures in characteristic ways" (Suczek & Klopfer, 1952, p. 15).

One of the earliest studies concerned with the stimulus properties of the B-G figures is an investigation conducted

in 1952 by Suczek and Klopfer. The aim of this endeavor was to explore the associations and meanings attributed to the test figures by a group of 48 male and female college students. In order to do this the experimenters projected each Bender Gestalt figure on a screen for two and one half minutes and requested the group of subjects to write down every feeling, thought, and reaction that came into awareness while looking at the figures. The authors analyzed the associations for each Bender Gestalt figure separately and developed a classifactory scheme in which these associations could be summarized. The final scheme consisted of four major categories including: (1) "Focus of Interest," (2) "Affective Pull," (3) "Symbolic Value" and (4) "Tentative Interpretative Hypothesis." The authors then go on to give a detailed analysis of each B-G figure in line with these four categories and the major sex differences found. They conclude that these associations are what the Bender Gestalt designs mean to the subjects themselves and that these meanings are fairly consistent throughout the group for the figures have relatively consistent stimulus values (Suczek & Klopfer, 1952, p. 74). The difficulty here, however, is that the similarity in associations may reflect the restricted sample studied more than it does the consistent stimulus value of the figures. In addition, the focus was on the structural properties of the Gestalt figures rather than upon the meaning of the figures to the individual taking the test. Moreover, the use of group testing and the fact that the experimental situation

differed markedly from the standard administration where the subject actually reproduces the designs rather than merely perceives them appears to further suggest that the conclusions reached by Suczek and Klopfer are not the most useful to an understanding of Bender Gestalt performance. The valuable conclusion, however, that individual differences existed and that the figures may have different meanings for each individual taking the test point to the direction that different individuals experience the Bender Gestalt Test in different ways. The need to understand what the test means to the individual in order to understand his performance is vital. This need seems to be implied in Greenbaum's discussion of the Bender as a projective instrument with children (Greenbaum, 1955). He writes:

> Potential variation in the meaning of any symbol among children is such that a general interpretation, even within a limited culture, of the meaning of any symbol (design) to a child, appears to be a hazardous clinical procedure. Yet, in general, and especially in clinical testing, it is important to know the meaning of a symbol to a child. In dealing specifically with the Bender, it appears most important to know this when there is some discrepancy between a specific figure and a child's reproduction (p. 27).

Greenbaum comments further that the use of associations to the various B-G designs is one way of obtaining material on what the meaning of a specific figure means to the child. It appears apparent, however, that more than the associative value of the design will be required in order to obtain a comprehensive picture of what the test means to the individual.

Tolor and Schulberg, perhaps more than any other experimenters, have devoted much effort to a study of the meaning of the Bender Gestalt designs. In the earliest of these studies Tolor focused his attention on the formal or structural properties of the Bender associations rather than on their symbolic significances (1957). The experimenter administered the B-G test to 50 neuropsychiatric patients according to standardized instructions and then requested his subjects to state what each of the nine designs could stand for. After analyzing the associations to all the designs in line with a broad, meaningful, and descriptive system, Tolor concluded that the Bender Gestalt figures vary considerably in their stimulus value and that they tend to evoke markedly different associations. He further noted that the observed differences could be related to the differences in the structure of the designs or that they could be a function of the different emotional attitudes and feelings elicited by the designs. Perhaps the combination of these two factors, however, is where the answer lies.

In 1960 Tolor again conducted a study on the meaning of the symbols presented to the subject during the administration of the Bender Gestalt Test. Once again Tolor stressed the view that in order to understand the individual's test behavior it is first necessary to comprehend the meaning of the symbols to which the subject is responding. In order to investigate this premise Tolor proposed to use the method of Semantic Differential. Briefly, this experimental procedure

requires the subject to evaluate a stimulus for its connotation with respect to a number of selected bipolar adjectival scales. There are seven spaces between the extreme poles permitting the subject to express both the direction and intensity of his judgement. Hence, the Semantic Differential permits objective recording and analysis of data so that some quantified expression of meaning is possible (Guertin & Davis, 1963). Tolor selected twenty scales of Semantic Differential such as good-bad, large-small, beautiful-ugly, heavy-light, rugged-delicate, et cetera, in order to obtain some data on the meaning of the Bender figures. Each B-G design was exposed to a group consisting of 68 male and female college students for three minutes and the subjects were requested to mark their judgement on each scale for each of the nine Bender designs. Tolor, unlike Suczek and Klopfer, found that there was very close agreement by members of both sexes in their evaluations of the Bender Gestalt designs. Thus, there were no significant differences as to the meanings attributed to the designs. Tolor comments that the findings of this study are limited to the specific population investigated and to the specific Semantic Differential scales employed. The findings do, however, suggest that like the Rorschach and other projectives, the Bender materials evoke symbolic reactions in the subjects who perceive the designs (Tolor, 1960, p. 435).

Tolor and Schulberg's most recent study (1963) once again utilized the Semantic Differential to determine

experimentally the connotative meaning of the nine standard test stimuli among various subgroups of psychiatric patients. The experimenters noted that the earlier work into the meaning of the Bender designs (Suczek & Klopfer, 1955, p. 73; Tolor, 1957, 1960, p. 437) led to the conclusion that the Bender Gestalt figures vary considerably in their stimulus value and in the descriptions which they tend to elicit. They note further that the importance of such findings becomes apparent when one considers that the quality of reproduction of the designs tends to differ appreciably for discreet psychiatric subgroups. Several investigators (Bender, 1938, p. 84; Billingslea, 1948, p. 7; Pascal & Suttell, 1951, pp. 41-46) have shown that the quality of the copy performance can generally be ordered from neurotics to psychotics to organics, with the first group demonstrating the least impairment and the last group showing the greatest degree of impairment in Bender drawing fidelity. It seems, then, that different styles of Bender Gestalt performance may be characteristic of different diagnostic groups.

Tolor and Schulberg write that:

> When the B-G is conceived of as a projective test, one could easily entertain the possibility that the Bender design associations, if they were relatively specific for different diagnostic subgroups, would reflect varying drives and adaptive styles contributing also to the group differences noted in reproducing the configurations. Thus, a generally inferior performance in copying the designs, or one which differs qualitatively, may be related to the specific and probably relatively more disturbing stimulus value for certain figures as compared to others rather than being simply the result of impaired perceptual-motor functioning (1962, p. 456).

The purpose of Tolor and Schulberg's study, then, was to determine the nature of the connotative meanings, as measured via the Semantic Differential, assigned to the nine B-G designs by 15 male neurotics, 41 male functional psychotics, and 15 male acute psychotics and to ascertain whether these descriptive rating patterns differentiated the various groups. The subjects were group tested, however, the Bender Gestalt designs were presented to each patient individually in the form of a mimeographed nine page booklet with each page containing a different Bender figure along with twenty Semantic Differential scales. The authors found that the patients responded differentially to the nine Bender Gestalt designs in regard to the connotative meanings assigned to them. However, Tolor and Schulberg found no essential differences in the connotative meanings which the Bender configurations evoked via the Semantic Differential as related to diagnostic classification. One is led to wonder, as did the authors, why this study did not obtain significant differences in the meanings attributed to the designs by the four diagnostic groups. It is suggested that perhaps the illness of the patients glossed over the differences which would have otherwise been found in normals and/or non-hospitalized individuals. In addition, one does not know how these patients would have drawn the designs. That is to say, significant differences might have been obtained if the patients were requested to copy the figures rather than indicate their judgements on the Semantic Differential. Since this scale

provides the subject with "ready-made" associations and demands only that he make a judgement one does not know what kinds of associations could have been elicited if the patients were asked to respond to the designs with the first thoughts brought into awareness upon being exposed to each Bender figure. Realizing such limitations, Tolor and Schulberg comment as follows:

> Since there are many differences in reproduction of the B-G designs, particularly among various diagnostic groups, there is critical need for studies elucidating the stimulus value of the figures. An adequate comprehension of the symbolic, affective, and associational impact which each of the Bender designs produces is thus regarded to represent an important intermediate stage in the final evaluation of the dynamic significance of the drawing deviations in patients (1962, pp. 459-460).

The above statement from Tolor and Schulberg brings to the fore the need to know more about the projective value of the Bender Gestalt designs and more about the nature of performance on the test. We have seen that some experimental work has been accomplished, but that there remains ample room for further investigation into the symbolic, affective and associational impact of the stimuli comprising the Bender Gestalt Test. There does appear to be relative agreement that the Bender designs take on individual symbolic significance, particularly of a sexual nature. There is, in addition, evidence which suggests that the Bender designs elicit differential associational responses. However, there is little, if any, work reported on the affective impact of the Gestalt designs. While such material is not available on the Bender per se there is, however, some literature on the affective impact of the

Rorschach and Thematic Apperception Test stimuli which may prove helpful.

The affective characteristics elicited by the various Rorschach inkblots is generally investigated during the phase of the test known as "Testing the Limits." Bruno Klopfer is generally given credit for the original development and elaboration of the principle of testing the limits techniques (Hutt & Shor, 1946, p. 73). In essence, the basic philosophy of this procedure is to establish a situation that is more highly structured for the subject and less highly restricted for the experimenter. Hence, it allows for an opportunity to restructure the testing situation in any way that might throw further light on the subject's functioning and on the way in which he experienced the testing situation (Klopfer et al, 1954, pp. 400-401).

The particular phase of the testing the limits procedure that taps the affective impact of the inkblots is called the "Like-Dislike" procedure. In discussing this procedure Klopfer et al write that:

> By asking the subject to pick out the card he likes the best and the one he likes the least and give his reasons for these choices, valuable information can sometimes be obtained which will enhance the interpretative significance of the responses previously given to the cards. . . . Asking the subject to give affective ratings of the cards will often give more detailed information about certain crucial responses given in his performance (1954, pp. 400-401).

It has also been found that certain Rorschach cards tend to be significantly chosen as best-liked or least-liked by geriatric subjects and child subjects and that definite sex

differences exist among the affectively rated cards. Ames et al (1954) have conjectured that these preferences for best-liked and least-liked cards have strong sexual symbolic and personal significance to the subject making the choices and that this significance influences the individual's performance to a considerable degree.

Some work has also been done with affective choices and performance on the Thematic Apperception Test (Henry, 1956). Henry suggests having the subject choose two cards as best liked and two as least liked after the testing proper is completed and following the choices with a search for reasons as to why the specific choices were made. Speaking of reasons for having subjects select best and least preferred stories, Henry writes:

> Not all aspects of the stories to which special meaning may be given are symbolic in the ordinary sense. Certain other features of the stories may take on significance through some feature which lies not in the content itself but rather in some special dynamic relationship attributed to it by the subject. Thus, the stories selected by him as best liked or least liked bear some special significance worth study. In general, it may be suggested that the best-liked stories represent for the subject his positive image and constructive defenses. The least-liked stories represent his apprehensions and ego-defects (1956, p. 95).

It appears, then, that the findings with other projective instruments have found it helpful to have individuals select the cards or stories they like the most and those they like the least and to follow this procedure with a search for the reasons as to why the selections were made. Such data has

been utilized to interpret test behavior in a more individualized and comprehensive manner and has proved of assistance in understanding what the experience of taking the test has meant to the subject. The use, then, of the "Like-Dislike" procedure should prove of value in obtaining a more thorough understanding of what the Bender Gestalt designs mean to the individual. Based upon Tolor and Schulberg's contention that an adequate grasp of the symbolic, affective and associational impact which each of the nine B-G designs produces will lead to a more thorough understanding of Bender performance, it appears that a study which incorporates all of these characteristics will allow one to be at a better position to genuinely understand the nature of Bender Gestalt performance. Knowledge of these factors will hopefully shed light on what the test means to the individual which in turn is the major characteristic of the interpretative process. Hence, a comprehensive analysis of the interpretative factors which obtrude between perception and execution of the designs will allow the investigator to better understand the subject as a unique individual. It is precisely such a task that will be attempted in the present investigation.

Problem and Hypotheses

The earlier discussion indicated that a number of investigators, particularly Pascal and Suttell (1951, pp. 31-35), have assumed that Bender Gestalt performance is comprised of

three interrelated phases, namely perception, interpretation and motor reproduction. It has also been assumed that differences in reproduction of the Bender Gestalt designs are a direct function of the interpretative process and that the ability to perceive and motorically execute the designs is given (Pascal and Suttell, 1951, pp. 31-35). Simpson (1958) investigated this assumption using normal and neurotic first grade boys of average intelligence and concluded that such assumptions were valid. However, a number of weaknesses in Simpson's designs led this experimenter to conclude that further research was needed. The problem then is to investigate the validity of assigning deviant Bender Gestalt performance to interpretative factors which obtrude between perception and motor reproduction, with the use of well adjusted and poorly adjusted third grade boys of average intelligence. A second problem of this study concerns an exploration into the interpretative process and an attempt to obtain material on what the test means to the individual. In order to accomplish this goal an analysis of the symbolic, associational and affective phases, each an aspect of interpretative factors will be explored.

In order to investigate the problems the following hypotheses will be tested:

Hypothesis One: The Motor Phase

Well adjusted and poorly adjusted boys will not differ significantly in their ability to execute a cross, square, vertical diamond, and horizontal diamond.

Hypothesis Two: The Perceptual Phase

Well adjusted and poorly adjusted boys will not differ significantly in their ability to perceptually discriminate the two most similar Bender Gestalt figures from a series of four B-G designs for each of the nine standard figures.

Hypothesis Three: The Interpretative Phase

Well adjusted and poorly adjusted boys will differ significantly in the Pascal and Suttell scores obtained for their Bender Gestalt protocols, the well adjusted boys achieving superior (lower) Pascal and Suttell scores.

Hypothesis Four: Interpretative Phase Analysis-Affective

Well adjusted and poorly adjusted boys will reproduce the Bender Gestalt design selected as best liked very accurately, obtaining a low Pascal and Suttell score, and will obtain a higher Pascal and Suttell score on the design selected as least liked.

Hypothesis Five: Interpretative Phase Analysis-Sexual Symbolic

When the Bender Gestalt designs are rated as male or female or a combination of both, according to psychoanalytic theory, well adjusted and poorly adjusted boys will reproduce the Bender Gestalt design most accurately (obtaining a low Pascal and Suttell score) that is in accordance with their sex role preference as measured by the It Scale for Children.

Hypothesis Six: Interpretative Phase Analysis-Associational

When the associations to the B-G designs are analyzed in accordance with a descriptive evaluating scheme, there will be differences between the well adjusted and poorly adjusted groups.

CHAPTER II

THE DESIGN OF THE STUDY

The Subjects

Two groups of thirty boys in each group were used in this study. Group I was comprised of boys selected from those elementary school children attending the third grade of the Oklahoma City Public Schools who had been referred to the Division of Child Guidance specifically as a result of personality disturbance and subsequent inability to cope with the academic, social and personal demands of their classroom setting. Hence, the thirty boys comprising Group I were known as the "poorly adjusted group." The subjects in this group have all presented adjustment disorders to so marked a degree that they stand out as behavior problems or as being odd or different from their classmates and who because of their emotional difficulties are unable to make full use of the school program. Hence, their teachers have deemed it necessary that they be observed by a staff member of the Division of Child Guidance, generally a visiting counselor (social caseworker). The counselors have characterized the presenting problems of these subjects in the following ways:

These boys tend to be unable to keep up with the work of their classes. In general, their academic functioning is a year or two retarded, particularly in the area of reading and comprehension. One referral, in part, noted that "R. is working on a first year level and that there seems to be little carryover from one day to the next." Some of the boys have had no success with reading and to date remain almost total non-readers. These boys rarely complete their school work or turn in assignments. The referral for another subject notes that "L. does nothing in school and that he rarely hands in or completes an assignment." These subjects manifest numerous behavioral problems which in general include regression, acting out, neuropathic mannerisms, stuttering, shyness, and many other interpersonal difficulties. These subjects have been described as "nervous," "poorly adjusted," "way off," "uncooperative," "difficult," "discipline problem," "troublesome," "introverted," "immature," et cetera. As a result of their difficulties they tend to function poorly in the school environment and to remain on the periphery of group activities. Their adjustment problems have been observed by their parents, teachers and school administrators and a referral for individual testing, diagnosis, and placement has been made and completed.

Each of the subjects in Group I has been administered an individual intelligence test, either the Stanford-Binet or the Wechsler Intelligence Scale for Children by a qualified examiner as part of the general referral procedure. They have

also been given the California Test of Mental Maturity (Short Form) along with their classmates. It was thus possible to select only those boys who fell within the normal range of intelligence, for example, I.Q. of 90 through 110. An investigation of the children's health record revealed no evidence of cerebral palsy, convulsions, brain injury and other physical handicaps. The following criteria were employed in selecting those children as suitable for inclusion in the poorly adjusted group:

1. A referral to the Division of Child Guidance.
2. Enrollment in the third grade of the Oklahoma City Public schools.
3. Within the average range of intelligence; I.Q. 90-110.
4. Within the age range of eight years through nine years.
5. Free of cerebral palsy, convulsions, brain injury, or other physical handicap.

Group II consisted of thirty boys judged to be well adjusted and selected as being representative of polar opposites in manifest behavior to the group of poorly adjusted children. The procedure utilized in selecting the control population was as follows: An initial inspection of the school records of three Oklahoma City Public Schools was accomplished in order to locate those third grade boys who were within the average range of intelligence; I.Q. 90-110 (as measured by the Short Form of the California Test of Mental Maturity). A behavioral checklist consisting of a number of questions designed

to ascertain the adjustment of the children was presented to each third grade teacher with the request that she complete these checklists to the best of her ability (see appendix for sample checklist). Based upon an analysis of the completed checklists, those third grade boys suitable for inclusion in the well adjusted group were determined. Each of these subjects have met the following criteria:

1. Enrollment in the third grade of the Oklahoma City Public Schools
2. Within the average range of intelligence; I.Q. 90-110
3. Within the age range of eight years through nine years
4. Never retained in kindergarten, first, second, or third grade
5. Never referred to any clinic or agency for psychological evaluation because of emotionally disturbed adjustment
6. Free of cerebral palsy, convulsions, brain injury and other physical handicaps
7. Able to play well with other children
8. Reasonably spontaneous and outgoing
9. Relates well to peers and adults
10. Liked and respected by peers
11. Effective and productive in the classroom
12. Reasonable control over own emotions
13. Responsible and can be depended upon
14. Relatively free from fears, tension, tics, compulsions and other neuropathic mannerisms

15. Kind and helpful to teacher and classmates

16. Able to share possessions with classmates

Thus, the selected subjects in the two groups consisted of thirty well adjusted boys and thirty poorly adjusted boys matched for school grade placement, age, and intelligence. The results of this sampling procedure are summarized in Table 1. The intelligence levels of the well adjusted boys ranged in I.Q. from 91 through 110, while the intelligence levels of the poorly adjusted subjects ranged in I.Q. from 90 through 110. The ages of the well adjusted boys ranged from eight years and two months (C.A. 98 months) to nine years and ten months (C.A. 118 months), while the poorly adjusted boys ranged in age from eight years and three months (C.A. 99 months) to nine years and eleven months (C.A. 119 months). The similarity between the two groups on these control variables was demonstrated via the use of the F test for homogeneity of variance which was found in both instances (age and I.Q.) to be less than the value significant at the five per cent level of significance.

TABLE 1

COMPOSITION OF THE WELL ADJUSTED AND POORLY ADJUSTED GROUPS

	Well Adjusted Group	Poorly Adjusted Group
Chronological Age:		
Range	98 months to 118 months	99 months to 119 months
Mean	105.93 months	106.13 months
S.D.	4.91	4.94
Intelligence:		
Range	91 to 110	90 to 110
Mean	103.20	99.80
S.D.	5.93	6.82

Materials and Procedure

The terms "motor phase," "perceptual phase" and "interpretative phase" consist of three interdependent convenient classifications, but they do however, designate three aspects of the total act of reproducing the Bender Gestalt designs as postulated by Pascal and Suttell (1951, pp. 31-35) and others (Bender, 1938, pp. 52-65; Billingslea, 1948, p. 16). For the sake of clarity the manner in which these phases were operationally evaluated will be discussed under separate headings.

The Motor Phase:

Pascal and Suttell note that motor ability is one of the given factors involved in the reproduction of the B-G designs when ascribing differences in reproduction to interpretative factors. However, in view of the considerable evidence concerning variation in development among children (Bender, 1938, pp. 4-18; Gesell, 1946, p. 48) and due to the paucity of literature which supports this assumption a simple measure of copying ability was employed. Four geometric figures, namely a cross, square, vertical diamond and horizontal diamond, based upon their widely accepted validity as measures of motor development (Gesell, 1946, p. 50; Kephart, 1964, pp. 161-216; Terman and Merrill, 1960, p. 62), were utilized so as to ascertain the copying ability of the subjects.

Each of the four geometric figures was drawn on individual four inch by six inch white cards. The child was given

a sheet of white, unlined 8½ inch by 11 inch paper for each design and a freshly sharpened pencil for the execution of each figure. He was instructed, at the exposure of each design, to "make one just like this." The child was then requested to draw each figure a second and then a third time. Thus, the child was allowed three trials for each of the four figures. As in the 1960 Revision of the Stanford-Binet, in order to receive a pass for each design the child must be able to draw at least one good reproduction of the stimulus. The scoring for each of the four designs was consistent with Stanford Binet criteria and the suggestions of Kephart (1964, pp. 161-216).

The Perceptual Phase:

In order to ascribe differences in reproduction of the Bender Gestalt designs to interpretative factors it must be shown that perceptual discrimination is consistent between the well adjusted and poorly adjusted groups. Following the administration of the motor phase and the presentation of the Bender Gestalt Test each subject was administered a perceptual task whose purpose it was to discern the consistency of visual discrimination between the two groups of subjects. Each child was shown nine series of B-G designs. Series one consisted of the standard Bender stimulus card for design A, a closely drawn facsimile of it, and two deviations of design A (taken from Pascal and Suttell) both showing different degrees of variation. Each of the variations were drawn on four inch by six inch white cards with a felt tip ink pen so that the line

quality was consistent among all the designs. The three deviation drawings of design A along with the original Bender figure were mounted on a sheet of 28 inch by 5½ inch grey cardboard and separated from each other by one half of an inch. The placement of the designs was determined by assigning number one to the standard Bender stimulus, number two to the drawn facsimile of it, number three to the less marked deviation, and number four to the last design. A table of random numbers (Edwards, 1950, p. 223) was then consulted to obtain the exact arrangement of the four stimulus cards. The same procedure was utilized for the remaining eight series of Bender Gestalt designs. The child was instructed to look at each of the nine series, one at a time, and asked to "choose the two designs that look alike; that are the same." The subject needed only to select those two designs for each series that were most similar in order to pass this phase of the study.

Pascal and Suttell state that there can be no doubt that the individual is able to see the Bender designs as they are pictorially represented. This assumption has gained some validity as a result of a number of investigations (Kleinman, 1955, p. 51; Simpson, 1958, p. 42; Stoer et al, 1965), however, there has been very little work done with children to verify this assumption. This phase of the present study, therefore, will permit testing the second assumption of Pascal and Suttell that well adjusted and poorly adjusted children do not differ

in visual discrimination behavior in the perceptual phase of the Bender Gestalt. If it can be shown that both groups of subjects are able to copy the simple geometric figures (motor phase) with similar accuracy and that they can likewise discriminate the Bender Gestalt designs in the perceptual phase, the assumption that differences in Bender Gestalt reproductions can be assigned to interpretative factors will become much more tenable.

The Interpretative Phase:

Following the completion of the four simple geometric figures (motor phase) each subject was administered the Bender Visual Motor Gestalt Test according to standardized instructions (Bender, 1946). The drawings were executed on white, unlined 8½ inch by 11 inch paper with freshly sharpened pencils for each figure. It has been previously stated that the motor phase was designed to tap the copying ability of the well adjusted and poorly adjusted subjects. The perceptual phase considered the component of visual discrimination in Bender Gestalt performance. The interpretative phase is concerned with assigning differences in performance on the Bender Test to interpretative factors. If the two groups of subjects perform similarly in the motor and perceptual phases but differently in their reproduction of the B-G designs, then, the differences that emerge between the two groups of children would be assignable to interpretative factors. The interpretative phase of the investigation, therefore, was concerned with determining

whether well adjusted and poorly adjusted children differ in their reproductions of the Bender Gestalt designs. The results of this phase of the study, in addition, will have implications for the validity of the Bender Gestalt Test, however, test validity is not a primary concern of the present investigation.

In order to maintain anonymity and so as not to bias the scoring, all identifying data (initials, school, grade, I.Q., behavioral description, etc.) was placed on the back of each Bender Gestalt protocol. The subjects' reproductions of the B-G designs were scored by the author and an independent investigator both highly familiar with the Pascal and Suttell Scoring System. The protocols were not scored until all testing was completed. At the completion of testing all records were randomly organized, scored first by the author and then by the second examiner. A product-moment correlation coefficient of .91 revealed the consistency of examiner scoring.

As was noted earlier, the Pascal and Suttell Scoring System is the most widely used quantitative system for the Bender Gestalt (Koppitz, 1964, p. 48). Although it was designed for use with adults, Pascal and Suttell note that it may be validly utilized with children. Goldberg (1957), in addition, found this scoring system useful in his comparative study of normal, retarded, and schizophrenic children. Simpson (1958, p. 51) as well found the Pascal and Suttell Scoring System to be a valid and beneficial quantitative evaluating system.

The Pascal and Suttell scheme permits the scoring of

of only eight of the nine Bender Gestalt designs, omitting Design A. Thus, Design A could not be quantitatively evaluated in the present study. This scheme consists of a total of 105 scorable deviations for the eight designs plus the configurational analysis which covers the placement of Design A, overlapping of figures, compression of figures on the page, relative size and order of figures, and lines drawn between figures. The scores are accumulated by designs and to this is added the score which deals with the record as a whole (configurational score). The total score for each design plus the total configuration score equal the total raw score which may then be translated into a standard (Z) score. In the present study raw scores rather than standard scores were utilized since conversion tables are not available in the Pascal and Suttell manual for children. Simpson (1958) and Pascal and Suttell (1951, pp. 103-107) have utilized the raw score successfully in their studies of children's reproductions of the B-G designs. Hence, the raw score consisting of accumulated scorable deviations for the entire record was utilized in this investigation.

In order to understand the nature and process of Bender Gestalt performance and in order to analyze any differences in reproduction by well adjusted and poorly adjusted subjects that occur an analysis of what the test means to the individual was attempted. In essence, the operational manner of investigating what the test means to the individual was made possible

via an analysis of the interpretative phase of Bender Gestalt performance. According to Tolor and Schulberg (1963, pp. 65-89), such an analysis should include data on the affective, associational, and symbolic characteristics of reproduction of the designs. Consequently, the following procedures were utilized to investigate what the Bender Gestalt designs mean to the subjects.

Interpretative Phase Analysis--Affective:

At the completion of the perceptual discrimination task, the examiner placed the nine B-G cards, in order from Design A through Design 8, in front of the subject and asked him to select the design he liked best and the one he liked least. The child was told to "choose the design you like the most" and to state the reason for this choice. After the subject made his best-liked selection the experimenter stated "and now, choose the design that you like the least." This choice was followed by a request which asked the child to state why he disliked the design.

Interpretative Phase Analysis-Associational:

Following the affective rating task each child was shown the B-G designs one at a time and asked to tell what each design reminded him of. The experimenter gave each child the following instructions: "I would like you to tell me what each of these could stand for. Use your imagination and please give me the first idea that comes to mind. Remember, I want to know what these designs could be."

The child's association for each of the nine designs

was recorded and analyzed in line with the following broad and relatively objective descriptive system taken in part from Tolor (1957).

1. Rejection- Subject unable to interpret designs.
2. Non-specific Response- An association which could apply equally well to any or all the designs, for example, "a design" or "a drawing."
3. Descriptive Response- Design is described rather than interpreted, for example, "small dots" or "circle and diamond."
4. Letters of the Alphabet- Design or part of it is taken to represent a letter of the alphabet.
5. Interpretation that takes into account only part of the design or one which does not show a meaningful relationship between parts.
6. Interpretation in which parts are integrated into a meaningful whole.
7. Concept entirely inappropriate for form or design.
8. Movement projected into the figure.
9. Human content.
10. Animal content.
11. Object content.

Interpretative Phase Analysis-Sexual Symbolic:

Finally, The IT Scale for Children (Brown, 1956, 1957) was administered to each subject in order to determine his sex-role preference. The IT Scale is a relatively simple and valid projective instrument (Brown, 1956, 1957; Rabin & Haworth, 1960,

p. 316; Clark, 1963) that has interest and value for children. It was designed to "investigate and analyze the nature and extent of children's preference for objects and activities characteristic of their own or opposite sex. The concept, sex-role preference, has been operationally defined in terms of preferential responses of children to sex-typed objects and activities" (Brown, 1956, p. 4).

The IT Scale consists of 36 picture cards of various toys, articles, costumes, and activities representing typical male or female roles. As the experimenter presents these cards the child makes choices in terms of the fantasied preferences of "It," a figure drawing of a child drawn to represent neither the male nor female sex. The child is first asked to make selections which "It" would like by choosing from various sex-typed toys. Then follow eight pairs of pictures: Indians (male and female); clothes (male and female); sewing materials and airplane parts; cosmetic and shaving articles; mechanical tools and household objects; shoes (male and female); children playing (male and female); and building tools and baking articles. The final task requires the child to make a choice as to whom "It" would like to be: a boy, a girl, a girlish boy (boy dressed as a girl), or a boyish girl (girl dressed as a boy).

The scoring system for the IT Scale provides a range of scores from zero (exclusively feminine) to 84 (exclusively masculine), with a score of 42 representing no strong preference in either direction. Deviations above and below a score

of 42 would be in the direction of greater masculinity and greater femininity respectively.

The IT Scale score for each child was compared with the child's performance on the Bender Gestalt. When the nine B-G figures are rated, according to psychoanalytic theory, as containing male, female, or a combination of both sexual symbols, it was hypothesized that well adjusted and poorly adjusted children would reproduce the Bender Gestalt design most accurately (obtaining a low Pascal and Suttell score) that is in accordance with their sex-role preference as determined by the IT Scale for Children.

CHAPTER III

THE RESULTS

Motor Phase:

The motor phase of the present investigation was concerned with determining whether groups differing in their personal and social behavior and adjustment differed significantly in their ability to reproduce four simple geometric figures, namely a cross, square, vertical diamond and horizontal diamond. The children's drawings of these figures were scored as either pass or fail in accordance with Stanford Binet criteria and hence the chi square technique was used. Each individual reproduction was scored as pass or fail by two investigators, making sure that anonymity was maintained by having all identifying data placed on the back of the drawings and not scoring the drawings until all records were in. A product-moment correlation coefficient of .90 indicated the reliability of examiner scoring. Since the ability to execute these figures is generally independent of training and/or education and furthermore, since behavioral adjustment does not appear to significantly influence such motor performance no statistically significant difference between the two groups

was anticipated. An inspection of Table 2 below which summarizes the results and analyses of this phase of the study clearly indicates that the above expectation is a valid one. Hence, the obtained results are consistent with hypothesis one stating that no difference exists between the well adjusted and poorly adjusted subjects in copying the four simple geometric figures. Thus, differences between the two groups on B-G test scores cannot be ascribed to motor (copying) ability.

TABLE 2

PERFORMANCE ON THE FOUR SIMPLE GEOMETRIC FIGURES BY THE WELL ADJUSTED AND POORLY ADJUSTED GROUPS

	Cross	Square	Vertical Diamond	Horizontal Diamond
	Pass	Pass	Pass	Pass
Well Adjusted Group	30	30	30	29
Poorly Adjusted Group	30	30	30	26
Chi Square Value	.000	.000	.000	.003

Perceptual Phase:

In order to investigate Pascal and Suttell's second assumption concerning the given nature of the perceptual component in Bender Gestalt performance the two groups of subjects were requested to visually discriminate the two most similar Bender designs out of a series of four B-G designs. This simple procedure was repeated for each of the nine standard test figures. Thus, in order to test this phase of Bender performance it was only necessary to determine which subjects,

if any, made errors in identifying the replicas of the original Bender Gestalt stimulus designs and which ones did not make errors. Due to the discrete nature of the data the Chi Square technique was considered appropriate. However, at the completion of tabulating the results of the perceptual phase of this investigation it was found that every subject in both groups was successfully able to complete this task. Consequently, every boy matched the two most similar B-G figures correctly. It was thus concluded that hypothesis two could be unquestionably accepted and that differences between the well adjusted and poorly adjusted groups on Bender Gestalt test scores cannot be assigned to perceptual discrimination.

Interpretative Phase:

The interpretative phase is concerned with determining whether differences in Bender reproductions as scored by the Pascal and Suttell Scoring System occur between the well adjusted and poorly adjusted groups. In accordance with the postulates advanced by Pascal and Suttell any difference which is obtained between the two groups would be directly assignable to interpretative factors which obtrude between the "given" abilities to perceive and reproduce the designs (Pascal and Suttell, 1951). The results of the present study have thus far shown that no group differences exist in copying ability (hypothesis one) nor in perceptual discrimination (hypothesis two). Hence, if any difference between the well adjusted and poorly adjusted boys is found, this difference may logically

be assigned to interpretative factors. In order to determine, then, whether such a difference existed, as suggested in hypothesis three, the t-test technique was utilized. In addition, tests for homogeneity of variance were made so that appropriate t-tests could be calculated. The proper t-test was first computed to ascertain whether there was any significant difference between the two groups' total Pascal and Suttell score (entire Bender protocol). The result of this statistical analysis revealed that the mean total of scorable deviations for the well adjusted and poorly adjusted boys showed a statistically significant difference in performance on the Bender Gestalt Test beyond the .01 level, with the well adjusted boys showing superior performance. Consequently, it was possible to assign the existing difference to interpretative factors which obtrude between perception and execution of the Bender Gestalt designs.

In addition to answering the question concerning group differences on the total B-G record it was of interest to discover how the two groups executed each of the Bender figures as well as the ways in which they organized their drawings (configurational analysis). In an effort to determine any differences between the groups for designs one through eight and the configurational analysis the t-test technique was applied to these data. The results are presented in Table 3. Inspection of this table indicates that the two groups differed significantly in their execution of each of the Bender Gestalt

designs with the exception of design four. Thus, seven designs plus the configurational analysis significantly differentiated the well adjusted and poorly adjusted groups, whereas one design (design 4) failed to make this differentiation. In each of the cases the scorable deviations favored the poorly adjusted group suggesting that these subjects experienced much more difficulty in reproducing the test stimuli. Hence, the mean Pascal and Suttell score for the poorly adjusted group is 98.60, while the mean score for the well adjusted group is 48.87; a difference of 50 points in favor of the poorly adjusted group. Also, the data suggest that the performance of the poorly adjusted group was significantly more variable than that of the well adjusted group.

TABLE 3

DESIGN AND TOTAL SCORE MEANS FOR THE WELL ADJUSTED AND POORLY ADJUSTED GROUPS

	Well Adjusted Group	Poorly Adjusted Group	t-Value
Design 1	4.73	17.17	3.872**
Design 2	4.73	11.13	2.682**
Design 3	6.63	11.47	3.649**
Design 4	4.97	7.17	1.353
Design 5	5.77	7.93	1.926*
Design 6	5.43	14.33	5.745**
Design 7	7.53	12.53	2.645**
Design 8	3.41	7.00	2.267**
Configurational Analysis	5.73	8.67	1.829*
Total Score	48.87	98.60	6.887**
	S.D. 5.91	S.D. 36.54	
	F Value: 7.203**		

* Significant at the five per cent level of significance.
** Significant at the one per cent level of significance.

In view of the obtained results hypothesis three stating that significant differences exist between the scored reproductions of the Bender Gestalt designs by well adjusted and poorly adjusted boys may be accepted with confidence. Hence, the results of this phase of the present investigation give support to the formulations of Bender (1938), Billingslea (1948), and especially Pascal and Suttell (1951) that differences in Bender Gestalt reproductions may be ascribed directly to interpretative factors.

The remaining three phases of the present study were concerned with a number of exploratory techniques whose main purpose was an attempt to investigate the interpretative phase of Bender Gestalt performance. In essence, then, the remaining three sections of this study focused on obtaining data on what the Bender Gestalt designs mean to the individual. In accordance with the suggestions of Tolor and Schulberg (1963, pp. 65-89) an investigation of the interpretative phase of the Bender Gestalt should include the study of the affective, symbolic and associational impact which each of the Bender designs produces. Such data would provide the clinician with valuable material with regard to a meaningful comprehension and evaluation of the dynamic significance of the drawing deviations in individuals. Consequently, the following three sections were designed to explore each of these three phases of the interpretative process.

Interpretative Phase Analysis-Affective:

This phase of the study was concerned with investigating

whether affective characteristics, as defined in the present study by best liked and least liked preferences, influenced the performance of well adjusted and poorly adjusted subjects. It was specifically hypothesized that both groups of subjects would reproduce the B-G design selected as best liked very accurately, obtaining a low Pascal and Suttell score, and that they would obtain a higher Pascal and Suttell score on the design selected as least liked. For the purpose of answering this question the variance and t-test techniques were employed. The results of this analysis along with the individuals' affective preferences and Pascal and Suttell scores is presented in Table 4. Inspection of this table reveals that both the well adjusted and poorly adjusted boys performed significantly more effectively on the designs selected as best liked than they did on their least liked designs. This finding thus makes it possible to accept hypothesis four with confidence. Hence, it appears that affective preferences influence an individual's performance on the Bender Gestalt Test.

Interpretative Phase Analysis-Sexual Symbolic:

In an attempt to obtain further clues on the interpretative phase of Bender performance an exploratory investigation of the way in which the sexual symbolic properties of the B-G designs affect reproduction was undertaken. It has been shown that the Bender designs have sexual symbolic properties as defined by psychoanalytic theory. That is certain figures tend to have male sexual symbolic properties (long and pointed figures) others, female sexual symbolic

TABLE 4

COMPARISON OF THE PASCAL AND SUTTELL SCORES FOR THE BEST LIKED AND LEAST LIKED DESIGNS FOR THE COMBINED SIXTY SUBJECTS

Subject	B.L.D.	P.&S. Score	L.L.D.	P.&S. Score	Subject	B.L.D.	P.&S. Score	L.L.D.	P.&S. Score[a]
1	8	3	6	15	31	8	0	6	27
2	3	13	5	16	32	4	0	1	19
3	8	0	6	12	33	8	0	6	14
4	5	10	3	11	34	6	10	7	12
5	8	0	2	13	35	7	3	4	18
6	8	7	7	14	36	7	6	1	43
7	8	0	6	9	37	8	3	1	21
8	4	3	2	10	38	8	12	6	20
9	6	2	7	16	39	6	1	7	34
10	5	3	6	11	40	2	2	6	8
11	8	5	2	8	41	7	3	6	18
12	3	8	4	5	42	1	2	6	19
13	4	0	6	8	43	4	0	2	31
14	8	3	5	5	44	8	0	6	9
15	8	0	5	13	45	5	10	8	11
16	6	0	5	7	46	8	0	4	23
17	8	0	6	17	47	8	4	6	13
18	8	5	4	15	48	3	5	8	35
19	4	3	7	17	49	4	0	5	15
20	4	3	5	10	50	6	5	5	15
21	6	0	7	12	51	8	0	1	7
22	8	0	1	2	52	8	4	6	13
23	5	5	4	4	53	5	8	6	17
24	4	0	1	7	54	7	4	6	19
25	6	2	4	7	55	8	0	6	17
26	8	2	6	13	56	8	1	5	18
27	5	3	4	20	57	3	3	1	27
28	8	15	4	22	58	8	4	1	15
29	8	0	6	13	59	8	2	6	17
30	5	13	6	2	60	4	0	2	40

Mean Score of Best Liked Design: 3.50
Mean Score of Least Liked Design: 15.32
t Value: 9.898 (Significant at .01 level)

[a]Abbreviations
B.L.D.: Best Liked Design
L.L.D.: Least Liked Design
P. and S. Score: Pascal and Suttell Score

properties (round and enclosing figures) and still others tend to exhibit both male and female symbolic properties. Design seven, for example, has been labeled primarily male, whereas design four is termed primarily female. Designs "A" and five tend to exhibit properties suggestive of both sexes. Rating the designs in accordance with psychoanalytic theory, it was hypothesized that both groups of subjects would reproduce the B-G design most accurately (obtaining a low Pascal and Suttell score) that was in accordance with their preference for the male or female role (as measured by the IT Scale for Children).

In order to evaluate this hypothesis the Chi Square technique was employed. The resulting Chi Square value of 7.350 was found to be significant beyond the one per cent level of significance. Hence, hypothesis five was accepted. The acceptance of this hypothesis, then, suggests that individuals reproduce those Bender Gestalt figures most accurately that contain sexual symbolic properties that are consistent with their sex role preference.

Interpretative Phase Analysis-Associational:

The final investigation of the interpretative phase of Bender Gestalt performance involved a study of the associations elicited from the designs by the well adjusted and poorly adjusted subjects. Borrowing in part from Tolor (1957) a descriptive and relatively objective scoring system it was possible to categorize each subject's association to each of

the B-G designs (excluding design "A"). It was then possible to compare the two groups associations to the total B-G and to evaluate the hypothesis that there will be significant differences between the two groups. This comparison was achieved via the use of the Chi Square technique by comparing each of the eleven categories making up the associational scale for the test taken as a whole. The results of this analysis are presented in Table 5 which illustrates the Chi Square values obtained for the eleven association categories for the total Bender Gestalt. Observation of this table reveals that the well adjusted and poorly adjusted groups differed significantly in the number of rejections to the total Bender test. The largest number of rejections is in favor of the poorly adjusted group. Further inspection of this table shows that a significant difference occurred in the frequency of integrated responses with the larger number of such responses being in favor of the well adjusted group. Finally, Table 5 reveals a significant difference between the two groups of boys when the associations are scored as object associations. Once again the larger number of object associations favors the well adjusted group.

Further statistical procedures were employed in order to discern the nature of the associations given to the individual Bender designs by both the well adjusted and poorly adjusted groups. Tables 6 through 13 summarize the results of these analyses.

TABLE 5

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: TOTAL BENDER GESTALT PROTOCOL

Association Scale Category	Chi Square Value	P
1. Rejection	14.934	<.01
2. Non-specific Response	.050	>.05
3. Descriptive Response	.752	>.05
4. Letters of the Alphabet	.000	>.05
5. Part of the Design	1.157	>.05
6. Integrated Response	8.037	<.01
7. Inappropriate Response	1.823	>.05
8. Movement	2.428	>.05
9. Human Content	.536	>.05
10. Animal Content	1.715	>.05
11. Objects	9.938	<.01

An inspection of Table 6 illustrates that on design one the two groups differed significantly in the number of integrated associations. As expected, the greater frequency of integrated responses favors the well adjusted group.

TABLE 6

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN ONE

Association Scale Category	Chi Square Value	P
1. Rejection	1.456	>.05
2. Non-specific Response	1.017	>.05
3. Descriptive Response	.660	>.05
4. Letters of the Alphabet	.000	>.05
5. Part of Design	3.158	>.05
6. Integrated Response	6.945	<.01
7. Inappropriate Response	4.286	<.05
8. Movement	1.017	>.05
9. Human Content	2.069	>.05
10. Animal Content	1.053	>.05
11. Objects	.300	>.05

Further inspection reveals a significant difference between the number of inappropriate associations with the larger number of

such associations occurring in the poorly adjusted group. The remainder of the associational categories failed to successfully discriminate the two groups associations to design one.

An inspection of Table 7 illustrates that the two groups of subjects differed significantly in the frequency of rejections to design two as well as in the number of associations containing object content. The remaining nine categories failed to discriminate the two groups. The well adjusted group gave fewer rejections to design two as compared to the poorly adjusted group. The number of object associations was in favor of the well adjusted group.

TABLE 7

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN TWO

Association Scale Category	Chi Square Value	P
1. Rejection	5.193	<.05
2. Non-specific Response	1.072	>.05
3. Descriptive Response	.884	>.05
4. Letters of the Alphabet	2.069	>.05
5. Part of Design	.000	>.05
6. Integrated Response	1.491	>.05
7. Inappropriate Response	.100	>.05
8. Movement	3.158	>.05
9. Human Content	.111	>.05
10. Animal Content	.000	>.05
11. Objects	8.531	<.01

No significant differences occurred between the well adjusted and poorly adjusted groups in their associations, as measured by the association scale, given to design three (Table 8).

TABLE 8

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN THREE

Association Scale Category	Chi Square Value	P
1. Rejection	.741	>.05
2. Non-specific Response	1.017	>.05
3. Descriptive Response	.039	>.05
4. Letters of the Alphabet	.000	>.05
5. Part of Design	.000	>.05
6. Integrated Response	2.500	>.05
7. Inappropriate Response	1.071	>.05
8. Movement	1.017	>.05
9. Human Content	.000	>.05
10. Animal Content	1.072	>.05
11. Objects	.660	>.05

An inspection of Table 9 illustrates that no significant differences were obtained between the two groups of boys in their associations to design four.

TABLE 9

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN FOUR

Association Scale Category	Chi Square Value	P
1. Rejection	2.308	>.05
2. Non-specific Response	1.053	>.05
3. Descriptive Response	1.053	>.05
4. Letters of the Alphabet	1.017	>.05
5. Part of Design	.271	>.05
6. Integrated Response	1.176	>.05
7. Inappropriate Response	2.783	>.05
8. Movement	1.456	>.05
9. Human Content	1.270	>.05
10. Animal Content	.000	>.05
11. Objects	.067	>.05

Table 10 illustrates the finding that the frequency of rejections was the only associational category significantly differentiating the two groups of subjects on design five. As

previously discovered the larger number of rejections was found in the poorly adjusted group.

TABLE 10

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN FOUR

Association Scale Category	Chi Square Value	P
1. Rejection	4.043	<.05
2. Non-specific Response	1.017	>.05
3. Descriptive Response	.218	>.05
4. Letters of the Alphabet	.218	>.05
5. Part of Design	.000	>.05
6. Integrated Response	1.086	>.05
7. Inappropriate Response	2.308	>.05
8. Movement	2.069	>.05
9. Human Content	1.017	>.05
10. Animal Content	3.158	>.05
11. Objects	.133	>.05

An inspection of Table 11 reveals that two associational categories significantly differentiated the well adjusted and poorly adjusted boys. The table shows that the groups differed in the number of integrated responses given to design six;

TABLE 11

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN SIX

Association Scale Category	Chi Square Value	P
1. Rejection	1.964	>.05
2. Non-specific Response	.741	>.05
3. Descriptive Response	3.158	>.05
4. Letters of the Alphabet	.000	>.05
5. Part of Design	.000	>.05
6. Integrated Response	9.932	<.01
7. Inappropriate Response	1.053	>.05
8. Movement	1.053	>.05
9. Human Content	.000	>.05
10. Animal Content	.000	>.05
11. Objects	5.934	<.05

the larger frequency of such associations being in favor of the well adjusted group. Significant differences were also found to exist in the number of object associations elicited by design six. Once again the higher frequency of object associations was in favor of the well adjusted subjects.

As Table 12 indicates, no significant differences were found among the eleven associational categories that differentiated the two groups' associations to design seven.

TABLE 12

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN SEVEN

Association Scale Category	Chi Square Value	P
1. Rejection	.113	>.05
2. Non-specific Response	.000	>.05
3. Descriptive Response	1.017	>.05
4. Letters of the Alphabet	.000	>.05
5. Part of Design	2.069	>.05
6. Integrated Response	1.071	>.05
7. Inappropriate Response	3.158	>.05
8. Movement	.445	>.05
9. Human Content	.000	>.05
10. Animal Content	.000	>.05
11. Objects	.884	>.05

An inspection of Table 13 reveals no significant differences between the well adjusted and poorly adjusted groups with regard to their associations given to design eight.

The results of the associational phase investigation of the interpretative process of Bender performance have revealed that statistically significant differences exist among well adjusted and poorly adjusted boys when these associations are scored via a descriptive and relatively objective association

scoring system. Hypothesis six was confirmed with respect to three of the scoring categories, but failed to reach confirmation with the remaining eight categories. It was found that the two groups' associative responses could be statistically significantly differentiated with respect to the frequency of rejections, integrated associations, and finally, the number of object associations. Hence, it appears that the associational impact of the Bender Gestalt designs does influence the fidelity of Bender Gestalt reproduction.

TABLE 13

COMPARISON OF THE TWO GROUPS' ASSOCIATIONS: DESIGN EIGHT

Association Scale Category	Chi Square Value	P
1. Rejection	2.308	$>.05$
2. Non-specific Response	3.158	$>.05$
3. Descriptive Response	1.017	$>.05$
4. Letters of the Alphabet	.000	$>.05$
5. Part of Design	.000	$>.05$
6. Integrated Response	1.964	$>.05$
7. Inappropriate Response	.317	$>.05$
8. Movement	.000	$>.05$
9. Human Content	.000	$>.05$
10. Animal Content	.000	$>.05$
11. Objects	.317	$>.05$

CHAPTER IV

DISCUSSION OF RESULTS

The purpose of this study as stated at the outset was to investigate several assumptions concerning the nature of reproduction of the Bender Gestalt Visual Motor Test designs. These postulates as discussed by Bender (1938), Billingslea (1948) and particularly Pascal and Suttell (1951) assume that three interrelated phases are involved in Bender performance: (1) sensory perception, (2) interpretation, and (3) motor reproduction. It has been further postulated that the ability to perceive and motorically execute the designs is biologically given and therefore differences in B-G reproductions may be ascribed to interpretative factors which obtrude between sensory perception and motor reproduction. In individuals of normal intelligence without demonstrable brain damage differences in reproduction, then, are assumed to be a matter of what Pascal and Suttell term an "attitude," that is, what the test designs and the copying task mean to the individual in the light of his present situation and his past experiences (1951).

The above assumptions have been experimentally investigated in several situations (Kleinman, 1955; Niebuhr and Cohen;

1956; Simpson, 1958; Stoer, Corotto, and Curnutt, 1965), however, these studies rarely controlled for both the perceptual and motor factors. In addition, only one such investigation (Simpson, 1958) focused on the nature of Bender performance in children. Due to the paucity of the literature and due to the methodological weaknesses of Simpson's study, an examination of Pascal and Suttell's assumptions was carried out prior to the investigation of some of the characteristics of the interpretative process per se. In view of the several factors under discussion the first part of the present study was considered, for convenience of presentation and discussion, as three related hypotheses, each hypothesis focusing on one phase of Bender Gestalt performance.

Hypothesis one was concerned with copying ability. It was felt that if the well adjusted and poorly adjusted subjects exhibited similar copying ability any differences in the reproduction of the B-G designs that might occur could not, then, be assigned to differences in motor ability. Hence, all sixty subjects were requested to execute the four simple geometric figures in order to ascertain their copying ability. As the results of this phase of the study indicate (see Table 2), no statistically significant differences were obtained between the well adjusted and poorly adjusted groups as regards their ability to reproduce simple geometric designs. Therefore, hypothesis one was accepted making it possible to state that differences in reproduction of the test stimuli must be due

to factors other than the motor capacity required to reproduce them.

In order to confirm Pascal and Suttell's second assumption that no statistically significant difference exists between well adjusted and poorly adjusted subjects as regards sensory perception, each of the sixty subjects completed a simple visual discrimination task that was designed to evaluate perceptual efficiency at a gross level. The evidence reveals that every subject in both the well adjusted and poorly adjusted groups was able to successfully complete this phase of the study, thus indicating that both groups of boys were able to accurately perceive the B-G designs. In view of the perceptual phase results hypothesis two was accepted. Consequently, any existing difference in Bender Gestalt reproductions must be due to factors other than sensory perception.

Hypothesis three regarding differences in reproduction of the Bender Gestalt designs (as scored by the Pascal and Suttell Scoring System) by well adjusted and poorly adjusted subjects was confirmed by the results of the present investigation (see Table 3). In view of the findings that no significant differences existed between the two groups as regards their copying ability and perceptual discrimination, the existing significant difference on the Bender Gestalt protocols that was obtained may therefore be assigned to interpretative factors. That is to say, both the well adjusted and poorly adjusted groups appear to have experienced the Bender Gestalt

Test and the copying task in uniquely different ways. Moreover, since the magnitude of scorable deviations consistently favored the poorly adjusted subjects it appears sound to state that these boys experienced the test designs and the task of reproducing them in a more threatening and anxiety producing manner. Furthermore Bender and Pascal and Suttell consider impairment of the gestalt function to be related to the integrative capacity of the organism, the ego. Pascal and Suttell, in discussing their scoring scheme, note that ego strength lies in a continuum from very low to very high B-G scores with the high scores being indicative of minimal ego strength. The consistently high scoring records which are characteristic of the poorly adjusted group, then, suggest that these subjects lack the inner strength and internal resources required to produce an "acceptable" Bender Gestalt protocol.

In an attempt to further understand the difference found between the two groups on their total Bender records an analysis of the groups' performance on the individual designs and the configurational analysis was undertaken. This procedure indicated that every design, with the exception of design four, plus the configurational analysis significantly discriminated the two groups. Once again, the magnitude of scorable deviations consistently favored the poorly adjusted subjects. This design by design analysis was undertaken, then, in order to shed some light on the interpretative process, for example, how the well adjusted and poorly adjusted children

experienced the B-G designs. The finding that the two groups differed on seven of the eight scorable designs led the examiner to search for some possible psychological reasons behind these differences. It was felt that such material would prove of assistance in understanding the interpretative phase of Bender Gestalt performance.

Tolor and Schulberg (1963, pp. 65-89), two leading researchers on the Bender Gestalt Test, have written that an exploration of the B-G stimuli should include probing into the affective, associational and symbolic properties of the designs. These three characteristics, it is believed, significantly affect the individual's response to the test stimuli in that they tend to stem from rather deep layers of the personality. In essence, then, the affective, associational and symbolic properties may be viewed as a series of operational techniques for evaluating the interpretative phase of B-G performance; a major aim of the present investigation.

The first investigation into the interpretative process involved an exploratory attempt to see if affective preference is related to reproduction of the B-G designs. Specifically, it was hypothesized that both well adjusted and poorly adjusted subjects would execute the Bender design selected as best liked very accurately, obtaining a low Pascal and Suttell score, and that they would perform significantly less effectively on the design selected as least liked. This "like-dislike" procedure was used in a similar manner as on the

Rorschach and Thematic Apperception Test. In discussing the use of this technique as it is used on the Rorschach, Klopfer (1954) notes that it is of value in that the data it makes available enhances the interpretative significance of the responses previously given to the cards. He goes on to say that affective ratings may prove of assistance in understanding why an individual responded in the way he did as well as in gaining detailed and meaningful information about certain crucial responses given in the subject's performance. Thus, the clinician is placed in a better position with respect to getting at how the individual experienced the test stimuli. The use of this "like-dislike" technique, then, appeared to be one affective way of operationally tapping the affective impact of the Bender Gestalt designs. If it could be shown that preferred designs were more accurately drawn than non-preferred designs, it was felt that such data would prove of assistance in understanding how the subjects experienced the test as well as provide some informative clues regarding the interpretative process in general. An analysis of the results of the affective phase of the study (see Table 4) reveal that hypothesis four could be confirmed. Hence, a significant difference was found to exist between the subjects' best liked and least liked designs, with the magnitude of scorable deviations favoring the least liked designs. This finding appears to indicate that affective characteristics significantly influence B-G performance. The question as to how such emotional loadings affect

performance cannot be answered with the present data, however, a number of hypotheses seem to be in order.

It has been suggested (Henry, 1956) that best liked preferences tend to represent a subject's constructive defenses and positive views of self, whereas least liked preferences reflect his apprehensions and ego defects. That is, the subject, on a deeply personal level, identifies himself with those positive aspects of self or those characteristics he desires and sets up in an ideal image (ego-ideal). When these positive attributes are represented or symbolically portrayed in an external stimulus the subject tends to deal with this stimulus in a positive and constructive manner. On the other hand, the subject may respond to stimuli that are suggestive of personal inadequacies by escape, rejection, poor performance, or any other number of ways. In addition, since such negative stimuli "remind" him of his weaknesses he tends to experience anxiety which in turn interferes with accurate and effective behavior.

A large number of subjects noted that they liked the design selected as best liked because it was "easy to draw" and that they disliked the design they found difficult to copy. Such statements appear to suggest that both groups of boys performed well on those designs they felt capable of handling and poorly on those that demanded more of them. In other words, when the subjects were able to meet the demands of the situation (by accurately reproducing the designs) their image of

self could be bolstered. In contrast, when the subjects were unable to handle the situation they tended to experience this as a highly personal weakness and verbalized this by focusing on the difficulty of the design.

Finally, the best liked and least liked designs appear to be related to the sexual symbolic properties characteristic of each design. Since this phase of the interpretative process was considered in hypothesis five it will be discussed in relation to this hypothesis.

Hypothesis five stated that both groups of boys would reproduce the Bender Gestalt design most accurately that is in accordance with their sex role preference (as measured by the IT Scale for Children). In essence this hypothesis aimed at investigating whether the sexual symbolic properties of the designs influenced Bender performance. In order to evaluate this question the designs were rated as containing either male or female properties or a combination of both such properties in accordance with psychoanalytic theory. In addition, each of the sixty subjects was administered the IT Scale for Children (Brown, 1956) in order to obtain some measure of their sex role preference. A review of the results of the sexual symbolic phase of this study indicated that this hypothesis was upheld. Consequently, both the well adjusted and poorly adjusted boys reproduced the B-G design most accurately that was in line with their sex role preference. The confirmation of this hypothesis, then, suggests that Bender performance is

significantly affected by the sexual symbolic properties of the designs. Since the subjects were naive as regards the sexual ratings of the stimuli and since the sexual properties of the designs are symbolic rather than overtly represented, it appears that the sexual influence of the B-G designs occurs on a rather unaware level of behavior. That is to say, the subjects were not aware that they were accurately reproducing those designs that were symbolic of their preferred sexual mode or vice versa. Rather, they appeared to attribute their relative degree of success and/or failure in reproducing the designs to the ease or difficulty of the designs. It appears to this author that the subjects were able to unconsciously identify themselves with those designs that represented their preferred sexual role, often unaware to the subjects. This unconscious pairing of representative symbols and sexual style was then manifested in the actual reproduction of the B-G designs. Consequently, it appears that individuals do react to the sexual symbolic properties inherent in the Bender Gestalt designs and that this reaction may either assist or interfere with the manner in which the designs are reproduced.

The final phase of this study was undertaken in an attempt to delineate what it was about the Bender Gestalt designs that appeared to influence the significantly different Pascal and Suttell scores obtained for the well adjusted and poorly adjusted groups. This section of the study specifically focused on discovering whether differences between the two

groups of boys existed in the associations given to the Bender Gestalt designs. This exploration of the associational value of the designs was undertaken for it was felt that such material would provide very useful clues as to what the B-G designs meant to the subjects. In addition, it was believed that this material would provide data as to how the subjects tended to view the Bender designs on a more aware level of behavior.

In order to evaluate the associations given by the subjects it was first necessary to develop a system whereby the various associations could be categorized. In order to meet this need a system was developed which was based largely upon the one used by Tolor in his 1957 investigation into the meaning of the Bender Gestalt designs. The system used was a broad, descriptive and relatively objective scheme that permitted the examiner to categorize the various associations with respect to a subject's ability to come up with an association, associations that either fit or did not fit the design, associations that took into account only part of the design or those that integrated the various parts of the design into a meaningful whole, movement and, finally, the content of the associations. In essence, this association scoring scheme measured degrees of ego strength; that is, the associations were viewed on a continuum exhibiting various degrees of ego integrity. A rejection suggested a minimal degree of ego strength, while the use of part of the design indicated a

greater degree of such strength. The best indicator of ego integrity was evidenced by a well formulated integrated association. Utilizing this system to categorize the associations given by the sixty subjects, it was hypothesized that differences would exist between the well adjusted and poorly adjusted boys.

When the associations to the total Bender Test were analyzed it was found that significant differences between the two groups existed with respect to the number of rejections with the larger frequency of rejections occurring in the poorly adjusted group. Significant differences were also found in the frequency of integrated responses and in the frequency of object associations. In both instances the larger number of positive associations favored the well adjusted group.

In an attempt to explore the associational impact of the Bender designs more carefully a card by card analysis of the two groups' associations was undertaken. This was done in the hope that such an analysis would yield fruitful material on the nature of each of the B-G designs. The following is a brief discussion of the results and possible significances of this phase of the study.

Design one was found to differentiate the two groups of subjects with respect to the number of integrated associations. As expected, the greater frequency of integrated responses favored the well adjusted group. It was also found

that the poorly adjusted group exhibited significantly more inappropriate responses than did the well adjusted group. Reasons as to why the poorly adjusted subjects handled this design in the ways they did were not explored in this study. However, it is of interest to raise some hypotheses which might explain the difficulties apparently experienced by the poorly adjusted boys in copying design one. This design consists of twelve equidistant dots which appear to have no clearly delineated boundary. Perhaps it is this lack of boundary and the concomitant unstructured nature of the figure that may have caused the difficulty with the poorly adjusted subjects. These boys, themselves lacking strong inner controls, tend to find it very difficult to structure an external situation and to set up boundaries for their response to such a situation. As such these boys tended to execute the design by drawing dots clear across the page or simply by drawing five or six closely drawn dots, rather than the acceptable number of dots present in the stimulus. To some poorly adjusted boys the configuration of dots seems to have been suggestive of distasteful and anxiety producing thoughts, for example, bullet holes or insect tracks, et cetera. Since their associations were threatening the subjects were unable to cope with this design in an accurate and appropriate manner and hence, tended to react with a defensive response that frequently was inappropriate or that just barely met the request of the examiner to associate to the design.

Design two discriminated the two groups of subjects with respect to the frequency of rejections and the number of object associations. The greater difficulty experienced by the poorly adjusted boys in coping with this design, as exhibited by their larger number of rejections, suggests that these subjects found this figure to be a threatening stimulus. It is possible that the open character of this figure, like that of design one, was threatening to these boys because of the lack of a clear indication of boundary. It is further possible that the poorly adjusted subjects could not handle the repitative nature of this design. Many of the boys thus "refused" to associate to this design. Others responded with associations that were not grounded to structured concepts. Hence, they tended to bring to this figure poorly formed associations suggestive of ego difficulties.

Designs three and four failed to discriminate the well adjusted and poorly adjusted subjects. This finding, then, would appear to suggest that both groups of boys responded to these two Bender figures in a similar manner; that is, as far as the associational impact of the designs is concerned. Further evidence for this statement is available when one considers the earlier finding that only design four failed to differentiate the two groups with respect to the magnitude of total B-G scorable deviations.

Design five shares similar characteristics with designs one and two. That is to say, design five like design one is

made up of dots and like designs one and two, it is an open figure. Hence, boundary difficulties are likely to be present in this design. It is no wonder, then, that the frequency of rejections differentiated the well adjusted and poorly adjusted boys with respect to the associations elicited by this design. Once again, the poorly adjusted boys seem to lack the ego controls which are necessary in order to impose a structure upon an ambiguous stimulus. The mode of handling this inability may vary, however, one preferred mode of dealing with this difficulty appears to be an escape from the situation via rejection.

The well adjusted boys were found to exhibit a significantly greater number of integrated responses and object associations to design six in contrast to the poorly adjusted subjects. Hutt and Briskin (1960, p. 124) in explaining the common deviations of design six write that this design is important in that it is a direct portrayal of emotionality. Many insecure, anxious and neurotic individuals exhibit difficulties with the intersection of the two sets of curved lines suggesting problems in the areas of interpersonal relationships, spontaneity and appropriate affectivity. Such areas of difficulty tend to be present among the poorly adjusted boys. Consequently, their inability to handle the task in an integrated and appropriate manner appears to have some justification. It seems apparent that the stimulus properties of design six are less threatening than those of design five for example, for the

poorly adjusted boys were able to muster enough ego strength to produce some kind of association. However, some quality of the design, perhaps that discussed above, operated so as to impede more affective associations to this stimulus.

The final two Bender Gestalt designs failed to differentiate the two groups of children. Once again, this finding appears to suggest that the well adjusted and poorly adjusted subjects experienced designs seven and eight in a similar manner insofar as the associative values of these designs are concerned.

It appears from the results of this phase of the study that the associational impact of the Bender Gestalt designs is one way of investigating what the B-G designs mean to individuals. Via the use of the associations elicited by the two groups of subjects it became possible to see that the children experienced many of the Bender designs in different ways. Moreover, the unique way(s) of experiencing the test stimuli appears to influence the final reproduction or copying of the designs. Hence, it appears safe to conclude that at least one operational means of observing the interpretative phase of Bender Gestalt performance is made available via a study of the associative impact of the designs. When the study of the affective and sexual symbolic properties of the B-G designs are included the breadth of understanding appears to be considerably magnified.

Before concluding this chapter a note must be made

about the use of the Bender Visual Motor Gestalt Test as a clinical instrument. On the basis of the findings discussed in this and the previous section, the Bender Test, together with the Pascal and Suttell Scoring System, appears to be quite effective in differentiating well adjusted and poorly adjusted subjects of normal intelligence. This statement is of course based upon the use of the entire Bender Gestalt Test. It has been suggested that a shortened form of the Bender be employed as a screening device (Simpson, 1958, p. 79). However, since the entire test rarely takes more than fifteen minutes to administer and an additional ten minutes to score the need to shorten the test does not appear to be a vital one. In addition, since the results of the present investigation indicate that nearly every B-G design is capable of successfully discriminating the two groups of subjects, it appears that deleting a number of figures would significantly reduce the effectiveness of this instrument. Hence, the few minutes saved by shortening the test becomes much less important when viewed in the light of the data it does not make available to the examiner.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of the present investigation has been to examine the nature of reproduction of the Bender Gestalt Test designs by well adjusted and poorly adjusted subjects. The first section of this study concerned an attempt to validate Pascal and Suttell's (1951) postulate concerning the three factors essential to the reproduction of the B-G designs, namely, sensory perception, interpretation, and motor reproduction. These authors maintain that deviations in the copying of the designs are due directly to interpretative factors which obtrude between the perception and execution of the designs. They further state that in individuals of normal intelligence and free of demonstrable brain damage what is being evaluated by the Bender Gestalt Test is some factor other than the ability to perceive and reproduce the figures. This other factor has been called an attitude regarding what the designs and the copying task means to the individual.

Relatively little conclusive work exists with respect to the interpretative phase of Bender Gestalt performance or what the designs mean to the individual, however, there are a

number of researchers who have noted that any comprehensive study of this kind should include the investigation of the affective, symbolic, and associational impact of the B-G designs. Consequently, the second section of this study attempted to explore this phase of Bender performance. However, in order to investigate the interpretative process it was first necessary to show that deviations on the Bender could not be ascribed to the ability to perceive or copy (reproduce) the designs. To test the general hypothesis that differences in Bender Gestalt reproductions as exhibited by the two groups of subjects are related to interpretative factors the following hypotheses were formulated: (1) Well adjusted and poorly adjusted boys will not differ significantly intheir ability to copy a cross, square, vertical diamond and horizontal diamond; (2) Well adjusted and poorly adjusted boys will not differ significantly in the perceptual phase of the Bender Gestalt; (3) Well adjusted and poorly adjusted boys will differ significatnly in their reproductions of the Bender designs as scored by the Pascal and Suttell scheme; (4) Well adjusted and poorly adjusted boys will reproduce the B-G design selected as best liked very accurately and will do less well on the design selected as least liked; (5) When the Bender designs are rated as male or female or a combination of both, according to psychoanalytic theory, well adjusted and poorly adjusted boys will reproduce the B-G design most accurately that is in accordance with their sex role preference as measured by the IT Scale for

Children; and (6) When the associations to the Bender Gestalt designs are analyzed in accordance with a descriptive and relatively objective scoring scheme there will be significant differences between the well adjusted and poorly adjusted groups.

Thirty third grade boys of average intelligence and free of demonstrable brain damage were selected from a clinical population of children referred to the Division of Child Guidance of the Oklahoma City Public Schools in order to serve as the poorly adjusted subjects. A comparable group of thirty boys similar in age, I.Q., and school grade placement and determined to be well adjusted served as the control sample.

Both groups of subjects were exposed to the same experimental conditions. Each subject was first instructed to copy the four simple geometric figures in order to ascertain their copying ability. The subjects were then requested to copy the Bender Gestalt figures according to standardized instructions. Following the administration of the Bender the subjects were given a perceptual discrimination task in order to evaluate their perceptual discrimination ability. They were shown nine sets of B-G stimuli, one set for each of the Bender designs. Each set consisted of a Bender figure, a closely drawn facsimile of it, and two drawn deviations of the designs, each showing a different degree of distortion. Upon presentation of each set of stimulus figures the subject was asked to simply select the two most similar designs. The

boys were then asked to choose the B-G design they liked the most and to give the reason for this choice and also to select the design they liked the least and the reason for this choice. The "like-dislike" procedure was employed in an effort to tap the affective properties of the interpretative process. Following the affective rating task the subjects were asked to associate to each of the Bender designs. Finally, the IT Scale for Children was administered in order to obtain an estimate of the boys' sex role preference. This data was used in evaluating hypothesis five which concerned the sexual symbolic impact of the designs.

Analysis of the data revealed that each of the six hypotheses could be accepted with confidence. Thus, since it was shown that the well adjusted and poorly adjusted boys exhibited accurate and comparable copying and perceptual discrimination abilities the significant difference in Bender Gestalt reproductions that was obtained could be assigned directly to interpretative factors. Analysis of the data concerning the investigations into the interpretative process indicated that affective preferences significantly influence Bender performance. This was evidenced via the finding that both groups of boys copied the design selected as best liked more accurately than they did their least liked design. Since both broups of boys executed the B-G design most accurately that was in line with their sex role preference it was concluded that the sexual symbolic properties of the Bender designs

significantly affects the fidelity of reproduction. Finally, it was found that the associational impact of the Bender Gestalt designs is significantly different for the well adjusted and poorly adjusted groups suggesting that insofar as the associative value of the designs is concerned, the two groups of boys tend to experience these designs in uniquely different ways.

Although the validity of the Bender Gestalt Test was not a topic of consideration in the present investigation a study of this kind which proposes to test the differences between two diagnostic groups inevitably yields data regarding the validity of the differentiating instrument. The results of this study indicate that the Bender was successful in sharply discriminating the well adjusted and poorly adjusted subjects and thus, these results provide confirmatory evidence for the instrument's clinical utility. This finding gains additional support and meaning when it is noted that the Bender Gestalt Test is a rather simple way of gaining clinical material and insights via a task which children seem to enjoy doing.

In view of the reported findings, the following conclusions seem warranted.

1. Well adjusted and poorly adjusted third grade boys of average intelligence do not differ significantly in copying ability.

2. Well adjusted and poorly adjusted boys do not differ significantly in the perceptual discrimination of the Bender Gestalt designs.

3. Well adjusted and poorly adjusted third grade boys of average intelligence differ significantly in their reproductions of the Bender Gestalt designs scored via the Pascal and Suttell Scoring System.

4. Deviant Bender Gestalt performance may be assigned to interpretative factors which obtrude between sensory perception and motor reproduction.

5. The interpretative phase of Bender performance may be investigated through studying the affective, associational, and sexual symbolic properties of the designs.

6. Well adjusted and poorly adjusted boys copy the best liked Bender design significantly more accurately than they do their least liked design.

7. Well adjusted and poorly adjusted boys reproduce the Bender design most accurately that is in accordance with their sex role preference.

8. Well adjusted and poorly adjusted boys differ significantly with respect to their associations given to the Bender Gestalt designs.

9. The Bender Gestalt Visual Motor Test is a highly useful and discriminating clinical instrument for use with children. The test is capable of differentiating between well adjusted and poorly adjusted boys of average intelligence and free of demonstrable brain damage when it is used in conjunction with the Pascal and Suttell Scoring System.

IMPLICATIONS FOR FUTURE RESEARCH

At the completion of any investigation the experimenter is generally in a position to once again begin testing with a host of new ideas and insights. It is as though the very process of investigation is conducive to further thought and exploration. This appears to be especially true when the original study is of an exploratory nature as was the case with the present investigation. It appears to the author that a fruitful area of research into the nature of Bender Gestalt performance might be one that employs a more "clinical" use of the test. That is to say, using the Bender as a framework for a clinical interviewing situation. In addition to copying the designs, the examiner might ask his subject how he feels about the test; whether the designs drawn by the subject resemble the stimulus figures; how the drawn designs might be improved; or how the designs might be altered so as to make them more pleasing to the subject. Such data might provide the clinician with informative clues regarding the process of reproducing the Bender Gestalt designs.

A second area of future research might involve the study of the interpretative process as it is revealed in the performance of individuals of various age levels, for example, adolescent subjects, adults, and geriatric subjects. It might be found that the nature of interpretative factors differs among the various age levels. Similar techniques as those

employed in the present study might prove useful, however, new instruments might be more effective in testing these individuals. For example, an appropriate measure of sex role preference would have to be utilized. Perhaps one of the many masculinity-femininity scales or the Thematic Apperception Test might meet this need. Once appropriate instruments are located, the results of such an investigation might provide data that is highly valuable with respect to understanding the nature of Bender Gestalt performance.

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APPENDIX

BEHAVIOR CHECKLIST

BEHAVIOR CHECKLIST

Please indicate for each item a YES if the item is characteristic of the child, and a NO if the item does not describe the child.

SCHOOL--------- TEACHER'S NAME-------- CHILD'S NAME---------

1. The child's schoolwork is at a consistent level with the majority of his classmates.------
2. The child is able to play well with other children.------
3. The child is reasonably spontaneous and outgoing.------
4. The child relates well to peers and adults.------
5. The child is liked and respected by peers.------
6. The child is effective and productive in the classroom.------
7. The child is responsible and can be depended upon.------
8. The child is kind and helpful to teacher and classmates.-----
9. The child is able to share his possessions with others.------
10. The child shows reasonable control over his emotions.------
11. The child is relatively free from fears, tensions, and nervous mannerisms.------

Please indicate below any additional information.