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THE BENDER GESTALT TEST: A CROSS CULTURAL TEST(?)

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CHAPTER I

INTRODUCTION

Throughout the discipline of psychology it is widely
known that tests based primarily on verbal content are of du-
bious value in the comparison of different cultural groups
and in the comparison of individuals from different socio-
economic classes. On the Stanford-Binet Intelligence Test
for example, individuals from varying cultures, cultures upon
which the Stanford-Binet was not standardized, tend to be un-
familiar with much of the test content and thus are unable to
perform up to expectations. Moreover an individual intelli-
gence test such as the Stanford-Binet will be greatly in-
fluenced by the subject's personality, attitudes, and emo-
tional habits. Binet's description of intelligence includes
persistence, flexibility of mental approach, and criticalness,
all of which are aspects of personality (Cronbach, 1960, p.
185). Among the personality traits and emotional attitudes
and habits which obviously affect scores are lack of self
confidence, disinterest in school-like tasks, degree of moti-
vation and interest, shyness with strange adults, a value
system which praises failure, and many other innumerable

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habits, attitudes, and customs which vary widely among different socio-economic classes and cultures, broadly affecting overall test performance.

In order to eliminate some of the broad cultural and class differences found on verbal intelligence tests, non-verbal performance tests were designed. These tests generally depend less on habit and more on the ability to attack a new problem. Although educational handicaps and experiential background do not show up as directly on these tests as those of the verbal type it can not be said with any degree of certainty that performance tests are culture-free. The skills involved in performance tests are developed through learning, and while every culture provides some amount of training in relation to performance tasks, the intensity and relatedness of this training varies from culture to culture. Sarason (1959, p. 522) adds that " . . . tests can be biased not merely by their content, but also by the perceptual and rational tasks required, some of which may involve processes of a kind not familiar within the culture. . ." With respect to the validity of cross cultural intelligence testing, Sarason (1959, p. 527) states:

> . . . it is safe to say at present that no test exists which can approximate to a measure of inherent mental capacity irrespective of cultural experience, or which can measure differences of intelligence between individuals of a different culture than our own along dimensions they themselves consider important. It is also extremely likely that such a test or tests will never be

successfully constructed, if for no other reason
than that the very concept of testing is itself
at home in only a few cultures, principally our
own.

The Bender Gestalt test (B-G or Bender) is a non-
verbal, performance test which is one of the most widely used
psychological instruments in the field of clinical psychology,
ranking fourth behind the Rorschach, Draw a Person Test, and
Thematic Apperception Test, (Sundberg, 1961, p. 79). It con-
sists of nine geometric figures printed on four inch by six
inch white cards, and the subject is asked to reproduce the
figures.

Lauretta Bender (1938), Pascal and Suttell (1950),
and Hutt and Briskin (1960) among others have successfully
utilized the Bender Gestalt test to differentiate into broad
categories; normals, neurotics, psychotics, mentally re-
tarded, and brain injured individuals. More recently this
test has been used with children to diagnose brain injury, to
screen for school readiness, to study mental retardation, and
to diagnose learning and reading difficulties (Koppitz, 1964,
p. 3). The test has also been employed for differential
diagnosis between juvenile delinquents and young psychiatric
patients, and it has been used as a test of intelligence for
school children and as a projective instrument (Koppitz,
1964, p. 3). The clinical validity of this instrument has
been widely reported (Addington, 1952; Bowland & Deabler,
1956; Byrd, 1956, pp. 135-136; Tamkin, 1957; Clawson, 1959,
pp. 205-206).

Traditionally the Bender Gestalt test is considered to be minimally influenced by cultural variables. Hutt and Briskin (1960, p. 6) recommend the Bender Gestalt test for the socially deprived, the relatively non-verbal, the uneducated, the foreign born and the illiterate, assuming that the Bender Gestalt test is not influenced by educational and cultural factors. However, no one has experimentally demonstrated that cultural variables are insigificant factors that can be disregarded in evaluating the Bender Gestalt. Hebb (1961, pp. 17-37) has even indicated that the ability to perceive geometric figures is a learned skill and any learned skill may be affected by cultural factors.

This next section will systematically survey the literature and explore the theory behind the Bender Gestalt in an effort to discern the possibility that socio-economic and cultural background may effect Bender Gestalt performance.

THEORY

According to Gestalt psychology, the organization of stimuli into an image is based upon such perceptual laws as similarity, direction, proximity, and inclusiveness of parts of the stimuli. The resulting perceptual experience is a pattern of stimuli or as it is more commonly known a gestalt, in which the whole is more than the sum of its parts. These structuralized configurations, or organized units of gestalten are the result of innate, biological reactions. In the sensory

field, these gestalten correspond to the configurations of the stimulating world. Briefly stated, this is the static concept of classical Gestalt psychology (Bender, 1952, p. 50).

The dynamic concepts of Gestalt psychology were later emphasized by Paul Schilder. He 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." He said that "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." (Bender, 1952, p. 50) Bender elaborates upon Shilder's statements by stating that the final product of the Bender Gestalt Test ". . . is a visual motor pattern which reveals modifications in the original pattern by the integrating mecnanism of the individual who has experienced it." (Bender, 1938, p. 3) "The whole setting of the stimulus and the whole integrative state of the organism determine the pattern of the response." (Bender, 1938, p. 4)

Bender appears to be saying that in the act of perceiving the gestalt, the individual contributes to the configuration and that Bender Gestalt performance is determined by more than just the physical properties of the test. She states that the final gestalt is ". . . composed of the original pattern in space (visual pattern), the temporal factor of becoming and the personal-sensory-motor factor." (Bender, 1938, p. 5) The entire integrated state of the organism will

thus affect performance on the B-G. The subject will do more than merely perceive gestalten, he will complete and reorgnize gestalten according to the integrative state of his organism which will vary in different maturational levels and in functionally and organically determined pathology. On this theoretical basis, Bender has used, and successfully demonstrated that B-G performance is dramatically influenced by the whole organismic state of the individual, and that this instrument is a valuable device for differentiating and diagnosing maturational and pathological processes in the human being.

Billingslea (1948) too, expands upon classical Gestalt theory, indicating that accurate visual-motor perceptual behavior is a skillful act forming the foundation for Bender Gestalt performance. He adds that:

> 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. The 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. (p. 1)

Pascal and Suttell (1951) elaborate upon Bender's and Billingslea's assumptions in the following way:

> We would, in general, agree with this formulation. The overwhelming mass of clinical evidence gathered with the Rorschach test has served to fashion current opinion regarding the positive effects of experience on responses to perceived stimuli. To substantiate this view a good deal of experimental evidence has been forthcoming. Study of the drawings of psychiatric patients has a considerable history, and the evidence available suggests that when these are

compared with those of normal controls discriminating differences can be found. Thus, one would expect 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, ie. what they and the task mean to him in the light of his own experience. (Pascal and Suttell reference numbers omitted) (p. 6)

These authors clearly indicate that B-G performance is greatly influenced by all the testee's experiences, needs, attitudes and the meanings attributed to the designs. They indicate that B-G performance consists of three basic processes: (1) sensory perception, (2) interpretation, and (3) motor reproduction. Assuming the ability to perceive and reproduce the B-G figures as a given, it is clear that errors in the final reproduction of these figures will be a result of the interpretative process which obtrude between perception and execution.

Pascal and Suttell continue by stating:

Adults of normal intelligence without known cortical damage do not, in our experience, fail to reproduce the essential Gestalten. Deviations from the stimuli in these latter individuals do not seem to be a function of ability to perceive or execute the designs. We believe, therefore, that what is being measured by us in the scoring of the B-G of individuals of normal intelligence is some factor other than the ability to perceive or execute the designs. (p. 8)

This factor is described by Pascal and Suttell as an attitude toward reality. They consider the entire B-G test situation as a "bit of reality", with which the subject must cope. Using their own quantitative scoring system, which

today is the most widely used and valid B-G scoring system,
Pascal and Suttell found greater deviations from the Bender
Gestalt stimuli in those individuals whose attitude toward
reality was most disturbed. In individuals with normal in-
telligence and free from brain damage, Pascal and Suttell
found the greatest number of deviations in psychotic sub-
jects, fewer in psychoneurotic subjects, and fewer still in
nonpatients.

It can be seen from the writings of Bender, Billings-
lea, and Pascal and Suttell that definite dynamic concepts
have been added to the classical gestalt tenet of total reac-
tion to the total situation. Thus, not only are what and how
the individual perceives considered, but the way in which the
perceptions are used is also evaluated. The test product is,
then, an indication of how the stimulus is perceived, organ-
ized, what it means to the subject, what he does to simplify
it, and what he adds to it. Pascal and Suttell, however, extend
the use of the Bender Gestalt further than Bender's use of it.
Bender did not intend the B-G to be a method of personality
assessment, considering it a visual-motor performance test,
requiring the response of the "integrated organism" (Rabin and
Haworth, 1960, p. 320). She states that personality disturb-
ances in the neurotic personality seldom invade the visual-
motor sphere and that disturbances in perception or in the
visual motor gestalt function are not expected in the psycho-
neuroses. However, as Pascal and Suttell seem to indicate

there is no denying the relationship between personality and the "integrated organism." They unlike Bender, utilize the B-G test as a discriminating device between normals and neurotics.

Max Hutt has extended Bender Gestalt analysis and the effect of the individual's experiences, attitudes, and personality upon Bender Gestalt performance even further than Pascal and Suttell. He discusses the Bender as falling into the category of "partially structured personality tests."

> This category includes those measures in which the test stimulus remains relatively structured or conventionalized but the subject may respond in a relatively free or individual manner to this stimulus. Test material will generally be recognized by all subjects and interpreted, insofar as superficial or primary perceptions are concerned, by them in a fairly uniform way. However, their responses will reflect certain aspects of their own personality needs, since their responses are not restricted to any designated, chanellized alternatives. 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. On the other hand, the stimulus is still a conventional situation and so may limit the response to those alternatives which are possible within that cultural framework, at least insofar as the subject still retains his contact with and "normal" perception of reality. (Hutt, 1945, p. 136)

Hutt clearly considers the B-G figures to be a projective device ". . . because they elicit responses dependent in part upon the projection by the subject of his personal interpretation or interaction into the stimuli." (1945, p. 136)

The scoring system of Pascal and Suttell is a relatively simple, objective scoring procedure which has proven

its effectiveness in discriminating among normals, psycho-
neurotics, and psychotics. Their scoring method uses a uni-
tary score computed from the sum total of the distortion in
all the Bender Gestalt figures. The frequency of disturbances
of gestalt function appears in the B-G test record in propor-
tion to the extent of the disorder and the tabulation of these
distortions serve as an index to the severity of the under-
lying pathology. Despite its undeniable usefulness, however,
the Pascal and Suttell scoring system only attempts to dis-
criminate gross distinctions among classes of psychopathology.

Hutt and Briskin (1960), through the projective use
of the B-G test, attempt to elucidate more fully the nuances
of personality style, the patterns and areas of conflict, and
the individual's characteristic defenses, etc. They evaluate
many of the qualitative aspects of B-G reproductions previously
ignored and also incorporate a sequential analysis, an associa-
tional, symbolic analysis, and a configurational and structural
analysis of B-G figures. In short, the B-G test for Hutt and
Briskin is a true projective technique which entails many of
the skills utilized in Rorschachian technique, requiring the
utmost clinical sensitivity. It can be seen that Bender Ge-
stalt analysis has been widely extended since Bender's first
formulations and that today the entire personality of the
subject is seen as the most important factor in Bender Gestalt
analysis.

REVIEW OF THE LITERATURE

Over 130 publications investigating the B-G test
have appeared since Bender's initial work in 1938 (Koppitz,
1964, p. 48). Only a few of these, have concerned them-
selves with the processes involved in Bender Gestalt per-
formance, however, and little is really known about what goes
into the execution of a Bender Gestalt figure. As indicated
earlier Pascal and Suttell consider Bender Gestalt perform-
ance to consist of three phases: (1) sensory perception,
(2) interpretation, and (3) motor reproduction. They be-
lieve the interpretative phase to be the cause of deviations
in the Bender Gestalt reproductions of organically intact
individuals of normal intelligence.

In order to investigate Pascal's and Suttell's hy-
potheses, Kleinman (1955), in an unpublished doctoral disser-
tation administered the B-G to 52 schizophrenic adults and 28
normal adults. He showed that normal and schizophrenic sub-
jects differ in the interpretative phase of the Bender Gestalt
but not in the perceptual phase. His results were the first
to experimentally indicate that the Bender Gestalt designs
involve no difficulty at the sensory perceptual level for
adults and that deviant performance on the B-G is a result
of interpretative factors which obtrude between perception
and execution. In other words, the significant factor in
B-G reproduction concerns what the figures mean to the

individual taking the test. Kleinman, however, did not control
for the motor phase of the Bender Gestalt, and so no declara-
tive statement can really be made as to the significance of
the interpretative phase.

Niebuhr and Cohen (1956) similarly investigated the
hypotheses of Pascal and Suttell, attempting to determine the
contribution of the perceptual component in the B-G perform-
ance of adults. Using a procedure similar to Kleinman's study,
Niebuhr and Cohen's subjects had to match each one of the ac-
tual B-G designs with 6 alternatives (of varying degrees of
distortion) for each design, picking the two designs (actual
Bender and deviation) that were most alike. These authors
concluded: "The results clearly indicate that perceptual
efficiency, insofar as visual discrimination is concerned,
decreases with severity of psychopathology." (p. 177) More-
over "The adequacy of motor reproduction likewise decreases
with severity of psychopathology, but the degree and nature
of the relationship between perceptual and motor efficiency
remains unresolved. . . ." (p. 177) This study contradicts
the findings of Kleinman who found no differences in the vis-
ual discrimination ability between normals and schizophrenics.
Consequently Pascal and Suttell's hypothesis, that the inter-
pretative phase is responsible for deviant performance on the
B-G was placed in some jeopardy. In this investigation, the
differences in Bender reproduction between the normal and patho-
logical groups obviously can not be said to be produced solely

from differences in the interpretative phase, but rather, these differences appear to be also the result of perceptual differences between normal and pathological subjects.

A later study by Stoer, Corotto, and Curnutt (1965) supports Pascal and Suttell's hypotheses, contradicting the findings of Niebuhr and Cohen. On a similar perceptual discrimination task as that devised in the two preceding studies, Stoer, Corotto, and Curnutt found no significant differences between normal adult individuals and pathological adult individuals in regard to visual discrimination of the B-G. Significant differences were, however, evident between the pathological subjects and the normal subjects on reproduction of the B-G. The authors concluded that differences in performance on the Bender between normal and pathological subjects is due either to defects in the motor and/or integrative (interpretative) functions.

Simpson (1958) using 25 normal and 25 disturbed first grade boys of average intelligence, also investigated the validity of assigning deviant performance in B-G reproduction to interpretative factors. Unlike the previous studies though, he controlled for the motor phase of Bender Gestalt reproduction. Each subject copied four geometric figures (cross, square, vertical diamond, horizontal diamond), and the final products of both the normal and disturbed groups were compared. No statistically significant differences were discovered in motor ability for either group so differences in

Bender reproduction could not be attributed to the motor phase. Upon completion of the motor phase each subject was administered the B-G test with one outstanding procedural deviation from standardized instructions. Instead of copying the B-G figures on a sheet of paper as Bender and Pascal and Suttell recommend, the nine figures were drawn on individual 4 inch by 6 inch cards. The perceptual phase followed, each subject viewing a series of four drawings for each of the nine Bender designs. Each series was presented one at a time and included a replica of the B-G card and three B-G drawing deviations, each with a greater degree of distortion. Thus nine stimulus sets of four figures each were shown to both groups and they had to choose the figure most like the actual Bender Gestalt figure from memory, their exposure to the original cards occurring during the actual test administration of the Bender Gestalt. The two groups of children did not differ significantly in their ability for perceptual discrimination, both the emotionally disturbed and normal children recognizing the replica of the Bender Gestalt figures as being more similar to the original figures than the deviations. Statistically significant differences were shown, however, between the normal and emotionally disturbed children on reproduction of the B-G figures. Since the two groups of children did not differ on either motor or perceptual phase performance, differences on the Bender were attributed to the interpretative phase. Simpson's findings corroborated Pascal and Suttell's hypotheses.

On the basis of these four studies (Kleinman, 1955; Niebuhr and Cohen, 1956; Stoer, Corotto, and Curnutt, 1965; Simpson, 1958), tentative confirmation of Pascal and Suttell's hypotheses can be reached. Only Simpson's study, however, controlled for Pascal and Suttell's motor phase and so actually just this one experimental investigation offers satisfactory evidence that the interpretative phase is responsible for B-G deviations. Moreover, an intensive analysis of Simpson's work reveals two questionable procedures which while possibly not effecting his results still bear mentioning.

To begin with, for some unexplained reason Simpson's subjects were instructed to perform the Bender Gestalt test on separate 4 inch by 6 inch white cards instead of the usual procedure of copying the figures on an $8\frac{1}{2}$ inch by 11 inch sheet of paper. By deviating from the standardized instructions, Simpson was unable to utilize a vital segment of the Pascal and Suttell scoring system which contributes to the validity of the B-G test as a diagnostic instrument. Pascal and Suttell use a configuration score which takes into consideration: (1) the placement of the first Bender design on the page, (2) the overlapping of designs, (3) the compression of designs on the page, (4) the use of lines drawn to separate the B-G figures, (5) the sequence or order of B-G designs placed on the paper and (6) the relative size of the reproductions. Pascal and Suttell have found that pathologic groups differ from normals on these six items but by having

his subjects reproduce the Bender on cards rather than a sheet of paper, Simpson could not use these discriminating scores. No rationale was presented to explain this deviation from standard procedure, and while it does not appear to be a crucial issue since Bender performance still differed between the two groups, it is felt by this author that deviations in standard procedure should not be made without definitive reasons.

For the perceptual phase, Simpson introduced a memory factor which would actually measure a somewhat different perceptual task than the one presented on the Bender Gestalt test. The purpose of the perceptual phase is to discern whether either the pathological or the normal subjects differ in their perceptual discrimination ability. Differences here would suggest that pathological subjects see the actual B-G stimulus differently from normals. In Simpson's study the subjects chose one of four cards which looked most like the actual Bender figures, but each Bender Gestalt figure was not presented simultaneously with these four choices. Instead, the B-G test was presented earlier and the subjects matched one of the four cards to a retained memory trace of the Bender figures. It is not known if this procedure affected the results, but it does seem to this writer that the Bender Gestalt figures should be shown simultaneously with the deviations to truly discern if perceptual differences exist between pathological subjects and normal subjects.

The research findings revealed in these prior studies

appear to lend support to the tenet that B-G reproduction is broadly influenced by the interpretative and integrative processes of the organism. Analyses of the reasons for interpretative differences between the experimental and control groups were not investigated, however, and the reader is left with no suggestions as to the processes involved. A gap was thus created in the state of the literature. That differences in B-G reproduction are not due to copying ability or perceptual ability, but rather are caused by interpretative differences seems quite plausible, but what these differences are and how they operate remains an unanswered question.

There has been present in psychology and particularly in psychoanalysis, the basic assumption that certain environmental objects stand in a symbolic relation to the male and female genital organs. As originally elaborated in psychoanalytic theory, the symbolic relationship was based on certain functional or structural likenesses between the symbol and the male and female genitalia symbolized. Thus, the penis is thought to be symbolized by elongated, pointed, or penetrating objects such as knives, telephone poles, or guns, and the vagina is symbolized by hollow, rounded, or enclosing objects such as boxes, pocket books, or houses. This psychoanalytic assumption appears to have gained rather wide and unquestioned acceptance and has now become for a great many psychologists an integral part of the interpretation of projective tests including the B-G test. A Freudian symbolic analysis of the Bender might

then yield revealing data as to the relationship between the
structure of each of the Bender figures, the corresponding
symbolic content of each figure and the effect such symbolic
content might have on the final B-G product for different
groups of individuals. Before citing the few studies con-
ducted in this area a crucial theoretical question must
first be discussed.

It was mentioned earlier in this paper that the B-G
test is commonly considered to be a culture-free test, even
by such individuals as Hutt who stress the projective use of
the Bender, and who emphasize the influence which the meanings
of the Bender figures have on the subjects reproduction of the
test. Since it is quite plausible that the interpretative
phase of the Bender is responsible for differences in repro-
duction of these figures, it must be assumed by those who
believe the Bender to be culture free, that individuals from
different cultures experience the Bender in a universal man-
ner. Such an experimental approach presuppose~ that the
Bender Gestalt figures are seen similarly by individuals from
different backgrounds and that a symbolic analysis of the
figures would reveal universal symbolic content for the nine
B-G figures for individuals from different cultures. In
other words as Erich Fromm would say, the B-G test elicits
universal symbols which are related to the intrinsic and
fundamentally human condition, both in the present time and
as far back as knowledge can be stretched. Included within

the scope of universal symbolism fall the basic sexual sym-
bols of Freud, universally influenced, according to Freud,
by an objects shape, and considered by Fromm to contain the
vast majority of symbols of a universal nature. Within this
theoretical framework it would appear that the B-G test would
elicit for most individuals, symbolic content falling within
the category of either the male or the female genitalia.

To postulate the existence of only universal symbols,
however, is to ignore the roots of symbolism derived from the
interplay of the person with his culture. As Spiegal notes
(Arieti, p. 914) "Culture in the large and in the family sub-
culture provides us with some of the materials for thought
in the form of word language. The culture makes its impres-
sion on us through the symbols and symbol activity of art,
entertainment and prestige, symbols which we share with our
society." Krout (1950, p. 35) adds that cultural factors
and variations in individual experience make it impossible
to generalize on symbolic meanings to the extent of assuming
the existence of universal symbols. Fromm (1951, p. 20)
too, while not denying the existence of universal symbols
states that: "Some symbols, however, differ in meaning ac-
cording to the differences in their realistic significance
in various cultures." Furthermore, "The particular meaning
of the symbol in any given place can only be determined from
the whole context in which the symbol appears, and in terms of
the predominant experiences of the person using the symbol."

A number of studies have explored the relative effect
both universal and cultural symbolism contribute to the sym-
bolic content and meaning of geometric designs. Since the B-G
itself is comprised of nine geometric figures the significance
of these studies is obvious. Evidence of universal symbolic
content would tend to indicate that individuals from different
cultures might view the B-G figures in much the same way, while
on the other hand indication of cultural symbolic content would
place such an hypothesis on rather tenuous grounds.

The first investigations were primarily concerned with
the Freudian hypothesis that elongated, pointed objects are
universally symbolic of the male genitalia and that rounded
or containing objects are universally symbolic of the female
genitalia. Levy (1954) presented ten abstract geometric shapes,
(categorized as either male or female according to psycho-
analytic theory), to a group of 62 emotionally disturbed fifth
grade boys and girls and had the children designate each geo-
metric figure as either male or female. The results showed
that the children were not able to label the geometric figures
consistently with Freudian theory at a greater than chance
level. These findings stimulated a number of other studies,
which seemingly contradict the results of Levy. Starer (1955),
Jones (1956), Moos and Mussen (1959), Stennett and Thurlow
(1958), and Olin (1961) all using a sample of psychiatric
adult patients and a sample of normal individuals tested their
subjects on a similar and/or identical task as that employed

by Levy, and found results consistent with psychoanalytic
theory. Both adults from a psychiatric population and adults
from a normal population consistently rated abstract geomet-
ric forms as either male or female consonant with the univer-
sal symbolic theory of Freud.

Since Levy used fifth grade children and the other
experimenters used adult populations, it may be that age is
a variable which affects the degree of sexual symbolism pres-
ent in abstract geometric figures. Two studies, one by Robin
(1962) and one by Jones (1961) corroborate the age factor as
an influential variable. Robin administered a series of 20
geometrical objects to three groups of varying age, (normal
children ages 3-6, normal children ages 9-12, normal adults
and psychotic adults), and found that the percentage of correct
sexual identifications increased with age. Jones, however,
found that normal children approximately 4 years prepubescent
(8.5 years), responded with a correct sexual symbolic response,
on a similar series of geometric figures as that of Robin,
more often than normal children at puberty or one or two years
beyond. He interpreted this as an effect of decreased dis-
crimination associated with heightened sexual drive as puberty
is approached. When this finding was compared to Jones' ear-
lier study (1956) with adults, it revealed that the adults
responded with sexual symbolism beyond the prepubsecent maxi-
mum perhaps according to Jones (1961), because of the increased
discrimination training implicit in the highly focused social

control of adolescent heterosexual behavior.

Thus while age appears to influence the accuracy of sexual symbolism to abstract geometric figures it does not appear to be the crucial factor causing Levy's children to obtain insignificant results, for the children in Jones' and Robin's study performed consistently with psychoanalytic expectations. While the latter two studies utilized a normal population and Levy used emotionally disturbed children, this too does not appear to be a significant factor, for the whole series of studies previously mentioned (Starer, 1955; Jones, 1956; Stennett, 1958; Moos and Mussen, 1959; Olin, 1961) agree that psychiatric patients of varying degrees of disturbance can organize abstract geometric forms consistently with Freudian theory. Thus while Freud's tenet of universal sexual symbolism appears to have been validated at least on an American population, nevertheless the findings of Levy still cause a certain degree of consternation, and it may well be that differences in the populations have caused the conflicting results.

A number of studies have introduced the cultural meaning of symbols as a major variable influencing the sex classification of objects (Schonbar and Davitz, 1960; Barker, 1957; Lessler, 1962; Lessler, 1964). Although many clinicians and theorists have emphasized the complex nature of symbols, symbols continue to be studied and interpreted on the basis of a single referent approach. According to Lessler (1964, p. 46), however,

If there were at least 2 referents to a symbol,
one Freudian and one cultural, it could be postulated
from analytic theory that the cultural sexual referent
would be more available to awareness and further re-
moved from communication with threatening instinctual
impulses or their derivatives than the Freudian sym-
bol referent. That is, the cultural referent of a
symbol is a socially acceptable, nonthreatening, and
a consensually valid means of referring to sexuality
which has gained some autonomy from the instinctual
impulses. Therefore, to the extent that an individ-
ual is free to choose what aspect of a symbol to which
he will respond, it would be expected that he would
choose the cultural referent.

Such an hypothesis was investigated by Schonbar and
Davitz (1960), Barker (1957), and Lessler (1962, 1964) through
similar procedures. For the sake of brevity only the latest
study by Lessler will be discussed. One hundred and sixty
symbols with judged Freudian sexual referents and empirically
established cultural sexual referents were sorted as male or
female by 169 college subjects. The ambiguity of the cultural
meaning and the congruity between the Freudian and cultural
referents of the symbols was systematically varied. Thus
some symbols had male Freudian meaning and male cultural con-
tent, some had female Freudian meaning and female cultural
content, some had male Freudian meaning and female cultural con-
tent, and others had female Freudian meaning and male cultural
content. Other symbols contained male Freudian referents with
no discernable cultural meaning or with a potpourri of content
interpretations, while still other symbols contained female
Freudian referents with no discernable, or a variety of con-
tent interpretations.

The results of all four studies were basically congruent. The findings supported the hypotheses that sexual symbols are complex rather than simple stimuli, and that the sorting of symbols is consistent with the cultural referent when it is discernable and with the Freudian referent when the cultural referent is minimized. Similar results were obtained for children as well as adults.

These last four studies clearly show that responses to structured symbols do not necessarily have the genitals as their sole referent. In fact when the stimulus provides two sets of cues, one set referring to anatomically defined sexuality, and the other to culturally defined sexuality, the culturally defined meaning takes presidence over the anatomically defined meaning. Since these investigations established that the so called universal symbols of Freud may also have cultural components, then more attention to the cultural or subcultural significance of the symbols would be in order in their interpretation. It follows that since cultural factors determine sex meaning, universality of meaning exists only to the extent that cultural elements are similar or identical for large numbers of people. Therefore on the Bender Gestalt test, a test which does not appear to have particular cultural meaning within the white western culture, it would be expected according to the results of the previous four studies that symbolic sexual content would be determined by the structural components of the figures. In other societies, however, the

Bender Gestalt figures may evoke different cultural meanings.
An understanding of an individual's sex role expectations in
his society and an understanding of the idiosyncratic cultural
background in relation to the symbol, is thus vital for an
analysis of any particular symbol or geometric form.

With regard to the B-G designs themselves, a limited
number of studies have been conducted in an effort to investi-
gate the symbolic, associational values elicited by these nine
geometric figures. The value of these investigations was pred-
icated upon the premise that in order to understand an individ-
ual's test behavior it is first necessary to comprehend the
meaning of the symbols to which he is responding. The studies
have limited their explorations to rather restricted popula-
tions, Tolor (1957) and Tolor and Schulberg (1962), investi-
gating the meanings of the B-G figures for a psychiatric adult
population, Suczek and Klopfer (1952) and Tolor (1960) inves-
tigating the meanings of the B-G figures for a college popu-
lation, and Greenbaum (1955) studying the associations of chil-
dren to the B-G during latency and the adolescent period, and
so conclusions reached from these studies must be limited to
the population from which the studies were conducted.

These investigations show that the B-G figures do
have symbolic meanings for individuals and moreover, that there
are design differences in regard to the connotative meanings
elicited by different B-G figures. Tolor (1957) suggested that
the marked variance in associations to the different figures

could be a function of either differences in the structure
of the designs or a function of the different emotional re-
sponses produced by the nine B-G figures. The findings also
suggest that the Bender evokes symbolic reactions having a
great communality of meaning for various individuals (Tolor,
1960; Tolor and Schulberg, 1962), but at the same time
Suczek and Klopfer's results (1955) seem to indicate that
the B-G figures may have different meanings for each indi-
vidual taking the test.

Viewing the Bender Gestalt as a projective test one
could easily hypothesize the possibility that specific B-G
design associations would reflect varying adaptive styles,
drives, needs, attitudes, and backgrounds significantly con-
tributing to overall performance differences on the B-G.
Thus a generally inferior performance in copying a design,
or a qualitatively different performance, could be related
to the stimulus value of one or more of the figures, a re-
sult of the interpretative phase. The relationship between
Bender performance and the stimulus value of the figures was
not investigated in these studies, however, and as of this
moment is a matter strictly of conjecture.

Commenting on the possible importance of the meaning
of the Bender Gestalt figures, Tolor (1962, pp. 459-460) stated:

> Since there are many differences in reproduction
> of the B-G designs . . . 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.

Therefore, if this relationship is a valid one, and if individuals from different cultural backgrounds have deviant symbolic meanings and perceptual associations for the nine B-G figures, it would appear that the Bender Gestalt performance of individuals from different cultures would differ also.

Why, though, should the meanings and symbolic content of the B-G test figures vary from culture to culture? Hallowell (1955, pp. 32-33) sheds some light on this question.

> Every human being undergoes a socialization
> process that has reference to the beliefs, concepts,
> values, technological devices, skills, etc. which in
> their totality, characterize a distinctive mode of
> life - a culture. The individual is an integral
> part of an ongoing sociocultural system that defines
> his relations to a physical and cosmic environment,
> as well as patterns and motivates his interpersonal
> relations with other members of his society. The
> socialization process, therefore defines the content
> of the learning process and limits the conditions
> under which personal adjustments must take place.
> Whatever degree of individuation or idiosyncracy
> occurs can emerge only out of the matrix set by the
> traditional culture.

Hallowell (1955, p. 36) further states that:

> A common culture implies, therefore, a common
> psychological reality, a common way of perceiving and
> understanding the world, and being motivated to act
> in it with relation to commonly sensed goals, values,
> and satisfactions.

Within this theoretical framework Hallowell (Rohrer and Sherif, 1951, pp. 164-165) comments further that:

> Perceiving . . . may not be a simple function
> of an individual's organic make-up alone but be re-
> lated to his group membership and thus involve

> differential cultural factors. The physical world
> is not mirrored in the perceiver, but rather man's
> past experiences, individual personality structure,
> and cultural background comprise a set of variables
> always relevant to the question of how the human
> organism perceives and becomes prepared for action.

This author adds that an individual's basic perceptual pro-
cesses will " . . . in part be influenced by the cultural
set imposed by his group membership." (p. 168) Moreover,
mans' " . . . perceptual responses to the world in which they
live and act become mediated, in part, through the kind of
concrete symbolic means provided by the cultural tradition
of their society." (pp. 169-170) Thus an individual's per-
ceptual input is meaningfully organized according to the
traditional cultural attributes of his group which distin-
guish one culture from another.

According to MacFarlane and Tuddenham (Anderson and
Anderson, 1951, p. 33), Rorschach theory as well as other pro-
jective techniques are based on such assumptions as elaborated
above, and they state that "Every subject's responses are not
the consequence of sheer accident, but are determined by psycho-
logical attributes of that subject." Moreover, "On the basis
of this assumption no new principle need be introduced if we
say that among the selective determinants are those derived
from the subject's group-membership relations, and that such
determinants may be thought of as varying from one group to
another." (Anderson and Anderson, 1951, p. 38) Such hypothe-
ses have received substantial confirmation from a good number of

studies comparing the projective test performance of individual's from different cultures (Cook, 1942; Hallowell, 1945; Henry, 1947; Adcock and Ritchie, 1958; Barnouw, 1963, pp. 242-264; Kaplan, Rickers-Ovsiankina, and Joseph, 1956). These studies have uniformly found large discriminating differences on the Rorschach and Thematic Apperception Test for different cultures indicating the significant effect cultural factors exert on the structuralization of perception. Hallowell (1955, p. 41) effectively summarizes the influence cultural experience has on projective material by stating:

> . . . where stimuli are in any sense ambiguous, the ambiguity will be perceptually resolved in meaningful terms that are related to the object content of the behavioral environment and personal needs of the individual in the situation. . . . individuals with different cultural backgrounds will tend to structure ambiguous stimuli with the same objective properties differently. . . .

Consequently an individual's performance on the B-G would appear to be influenced by all of these variables and since the interpretative phase of the Bender appears to exert the major influence in Bender reproduction, it would be expected that individuals from different cultures would perform differently on the Bender Gestalt.

Cross cultural studies of the Bender Gestalt test are few in number, however, and rather inconclusive. Bender (1938, pp. 26-35) cites a study by Nissen who compared drawings from the Army Performance tests, (which lend themselves to the same sort of analysis as the B-G, according to Bender) done by

African and American Negro children. Bender states that the
drawings of both groups show similar features but more primi-
tive drawings were found in the African group. She concluded
that " . . . a native child who has had no normal education
and has had no previous experience with paper and pencil may
produce copied forms with the same facility as an average
American born and educated child." (p. 32) Bender, however,
apparently viewed the process of Bender type reproduction in
children as a strictly maturational process and limited her
observations to the more formal, global gestalt principles
ignoring the many other qualitative, projective features now
used in B-G analysis and of course not utilizing the quantita-
tive scoring procedures of Pascal and Suttell which were de-
veloped many years later.

In another study, Bender (Sarason, 1959, p. 522)
found that among the natives of Saipan "Gestalt patterns corre-
sponding to those found in confusional states appear to repre-
sent norms." According to Sarason (p. 523), Bender:

> . . . apparently did not realize that the diag-
> nostic norms of the test were vitiated by the different
> perceptual modes of the Saipanese. Living in our own
> culture, with virtually universal and constant ex-
> posure to pictures - three - dimensional forms pro-
> jected on a two - dimensional surface - it is diffi-
> cult to comprehend the difficulty experienced by some
> people in reversing this projection to separate sub-
> ject from background.

Bender appears to attribute what differences were shown in re-
production to maturational disparities between cultures. As
with Nissen's study, analyses of Bender records were limited

to a global, observational, evaluation procedure.

Peixotto (1954) wished to determine if cultural dif-
ferences were reflected in B-G performance or whether the test
reflected intellectual and personality differences apart from
cultural variations. Seven cultural groups were used by
Peixotto, namely, Chinese, Japanese, Caucasians, Part-Hawaiians,
Portuguese, Chinese-Hawaiian, and Filipinos. All subjects were
patients referred to a clinic for evaluation but no mention
was made of the diagnostic categories except for the statement
that they were admitted "for a variety of reasons." (p. 370)
Only five subjects were used in each group, and their ages
ranged from 14 to 31 years with IQ ranging from 82 to 135.
The subjects were only roughly equated for intelligence and
their protocols were scored with the Pascal and Suttell system.

An analysis of variance indicated statistically signif-
icant differences for cultural groups and for the Bender de-
signs, but no significant interaction. Peixotto concluded
that the B-G may not be entirely free of cultural influences.
This investigation, however, may be criticized on several
points mainly: (1) the small size of the subsamples, (2) the
use of only patients as representatives of different cultures,
and (3) the lack of equating the groups for diagnostic cate-
gories and IQ.

A recently published study by Carlson (1966) investi-
gated the B-G performance of southern Negro and southern white
psychiatric patients. The two groups were matched for specific

diagnosis, IQ, and severity of illness. A T test found the Negroes to achieve a significantly poorer Pascal and Suttell score than the whites. Carlson reported that the Negroes had more schooling than the whites and that the results may suggest that with equal education the differences might have been even greater. However, one must not forget that the quality of education for Negroes in the south usually can not begin to compare with that of the whites. Carlson suggests that the differences may be a result of occupational and socio-economic differences between the groups. The whites and Negroes were not matched for occupational and socio-economic level, and generally speaking Negroes, especially southern Negroes are from a lower socio-economic class. Carlson suggests that individuals in a lower socio-economic level may not engage in activities important for developing perceptual motor skills which may result in poorer B-G performance. He finally states that the causes of the differences between Negroes and whites could not be determined, and "Further investigation is needed to determine how and to what degree cultural and socio-economic factors do influence performance on the Bender Gestalt." (p. 98) Furthermore Carlson's findings are limited to a psychiatric population.

Tolor and Schulberg (1963) have evaluated all the published experimental studies utilizing the B-G, including all the work dealing with the influence of culture on B-G performance. They conclude that:

On the basis of these few studies, (Nissen, Bender, Peixotto), some of which are grossly inadequate in design, no definitive conclusion is possible as to the status of the B-G test in relation to cultural variations. . . . The degree to which cultural factors interact with individual personality or intellectual differences has not been resolved as yet. It is deplorable that our information about this area is so scanty, especially when the proponents of this test often regard it as being independent of cultural influences. (p. 64) (parenthesis mine)

They go on to say that "Some of the most critical areas for future research pertain to the . . . precise role of cultural factors in B-G functioning." (pp. 203-204)

PROBLEM

Based upon theoretical grounds it would appear that the B-G test should be influenced by cultural factors, but definitive experimental evidence corroborating this theory is lacking. This dissertation proposes to investigate the influence culture and socio-economic background have on B-G reproduction. It will also contribute additional information concerning the interpretative phase in Bender performance. At this moment it is known that the Bender Gestalt figures do have certain symbolic associations and meanings attached to them, and it is believed that B-G performance is greatly influenced by what the figures mean to the subject (interpretative phase). The relationship between the meanings of the figures and performance on the Bender Gestalt test has not previously been investigated, however.

Specifically, the problem of the present investigation, is to examine the validity of using the Bender Gestalt test indiscriminately with individuals from different cultural and socio-economic backgrounds, using Kickapoo Indian boys, Negro boys from a low socio-economic class, white boys from a low socio-economic class, and white boys from a middle class background. This will be examined by a quantitative method (Pascal and Suttell scoring system) and a symbolic and associational analysis. Moreover the validity of assigning deviant performance in Bender Gestalt reproduction to interpretative factors, which obtrude between perception and execution of the B-G figures will be further investigated.

The following hypotheses will be tested:

Hypothesis One - The Motor Phase

Kickapoo, white middle class, white low socio-econimic class, and Negro low socio-economic class boys will not differ significantly in their copying ability of four simple geometric figures (cross, square, vertical diamond, and horizontal diamond).

Hypothesis Two - The Perceptual Phase

Kickapoo, white middle class, white low socio-economic class, and Negro low socio-economic class boys will not differ significantly in their ability to perceptually discriminate the two most similar Bender Gestalt designs from a group of four B-G designs for each of the nine standard figures.

Hypothesis Three - The Interpretative Phase

Kickapoo, white middle class, white low socio-economic class,

and Negro low socio-economic class boys will not differ signif-
icantly in the Pascal and Suttell scores derived from their
Bender Gestalt records.

Hypothesis Four - Interpretative Phase Analysis I
(Symbolic)

Kickapoo, white middle class, white low socio-economic class,
and Negro low socio-economic class boys will not differ signif-
icantly in the way in which they sort Bender Gestalt designs
into male and female categories.

Hypothesis Five - Interpretative Phase Analysis II
(Association)

Kickapoo, white middle class, white low socio-economic class,
and Negro low socio-economic class boys will not differ signif-
icantly in their associations, (analyzed via a descriptive and
relatively objective evaluation system), to the Bender Gestalt
test.

CHAPTER II

THE DESIGN OF THE STUDY

The Subjects

Eighty subjects were used in this study. The subjects
were equally divided among 4 distinct groups; the Kickapoo
Indians, Negroes from a low socio-economic class, whites from
a low socio-economic class, and whites from a middle class
environment. Group I consisted of 20 Kickapoo boys selected
from 5 rural schools located in towns near and along the North
Canadian River. Group II was comprised of 20 Negro children
attending elementary schools, (whose student body is largely
Negro), located in low socio-economic areas of Oklahoma City.
Group III consisted of an equal number of white children at-
tending elementary schools (whose student body is largely
Caucasian), located in low socio-economic areas of Oklahoma
City. The last group consisted of 20 white children, attending
elementary schools in Oklahoma City, in predominately white
middle class communities.

The children's ages ranged from 8 to 10 years. All
subjects were enrolled in the third grade of school with the
exception of some of the Indian children who attended non-graded,

second and fourth grade classes. The IQ's of the subjects fell into the range of 90-110, the only exceptions occurring for the Kickapoo Indian children who were never administered intelligence tests. The comparison of IQ scores of Indians with more acculturated individuals carries certain qualifications at best, and it has been shown that the mean IQ's of Indians will be significantly lower than the standardized population norms, due to cultural differences between the groups (Howell, Evans, Downing, 1958). Since IQ score is highly correlated with school performance, Kickapoo Indian children of approximately average intelligence were selected by their level of school achievement and by teacher and principal ratings.

All the children used in this study were judged to be well adjusted children. This evaluation was determined through a behavioral check list given to the children's teachers and through a close scrutiny of each child's school history and other available information. Each of the children have met the following criteria:

1. Has never failed to be promoted.

2. Never referred to any clinic or agency for psychological evaluation because of emotionally disturbed adjustment.

3. Free of convulsions, brain injury, or other physical handicaps.

4. Able to play well with other children.

5. Reasonably spontaneous and outgoing.

6. Relates well to peers and adults.

7. Liked and respected by peers.

8. Effective and productive in the classroom.

9. Reasonable control over own emotions.

10. Responsible and dependable.

11. Relatively free from fear, tension, tics, compulsions, and neuropathic mannerisms.

12. Kind and helpful to teacher and classmates.

13. Is able to share his own possessions with others.

The four groups of children were matched for age, intellectual level, and school grade placement whenever possible. The results of matching for age and intellectual level are shown in Table 1. The middle class white group ranged in age from eight years and four months (100 months) to nine years and ten months (118 months); the low class white group ranged in age from eight years and four months (100 months) to ten years and two months (122 months); the low class Negro group ranged in age from eight years and four months (100 months) to nine years and nine months (117 months); and the Indian group ranged in age from eight years and two months (98 months) to ten years and six months (126 months). The IQ's of the middle class white subjects fell between the range of 91 to 110; the IQ's of the low class white subjects ranged from 90 to 110; while the IQ's of the low class Negro group fell between 90 and 107. The F Tests for homogeneity of variance for age and IQ were calculated and in all instances found to be less than the value significant at the five per cent

level, thus substantiating the assumption of homogeneity of variance.

TABLE 1

COMPOSITION OF THE GROUPS

Group	Chronological Age Range	Mean	S.D.
Middle class white	100(months)-118(months)	105.80(months)	4.5
Low class white	100(months)-122(months)	108.60(months)	5.6
Low class Negro	100(months)-117(months)	108.70(months)	4.2
Kickapoo Indians	98(months)-126(months)	108.35(months)	8.4
Group	Intelligence Range	Mean	S.D.
Middle class white	91-110	104.05	5.5
Low class white	90-110	98.35	6.2
Low class Negro	90-107	97.05	5.1
Kickapoo Indian	a	a	a

[a]No IQ scores available.

MATERIALS AND PROCEDURE

The Motor Phase

In order to determine that deviations on Bender Gestalt performance among groups are not caused by variations in copying ability, all eighty subjects were asked to reproduce a cross, square, horizontal diamond, and vertical diamond, each time using a freshly sharpened pencil. These figures were individually presented to each child on 4 inch by 6 inch white index cards and each child was requested to copy them on separate 8 1/2 by 11 inch sheets of white paper.

The use of these 4 simple figures (cross, square,

horizontal diamond, and vertical diamond), is based on their widely accepted validity as measures of motor development (Terman and Merill, 1960, p. 62; Kephart, 1964, pp. 161-216; Gessell, 1946, p. 50). In view of their acceptance as valid measures of motor development, they were used for comparing the motor ability of all four groups of children. Since the B-G test is believed to be comprised of three interrelated phases, (perceptual phase, interpretative phase, and motor phase), if no differences in copying ability between groups is evidenced, then the motor phase cannot be said to determine B-G drawing deviations among the four groups of children.

As in the Stanford-Binet Intelligence Scale, 1960 Revision, each child was allowed three trials for each of the four figures. In order to pass, each child had to draw at least one good reproduction. Scoring of the 4 geometric figures was consistent with the criteria set forth by Terman Merill (1960) and Kephart (1964, pp. 161-216).

The Perceptual Phase

Following the motor phase each child was administered the B-G test, according to the standardized instructions of Lauretta Bender. The B-G test per se will be discussed in the following section. After the presentation of the nine Bender figures each child was shown a series of four 4 inch by 6 inch white cards containing the actual B-G test stimulus, a closely drawn facsimile, and two deviations of the B-G test

figure of varying degrees of distortion, selected from Pascal
and Suttell's (1951) manual. The four cards were secured $\frac{1}{2}$
inch apart onto a 28 inch by $5\frac{1}{2}$ inch strip of grey cardboard,
and each subject was asked to "choose the two designs that
look alike; that are the same." This procedure was repeated
for each of the nine B-G test designs, each series containing
the actual Bender, a closely drawn facsimile, and two gross
deviations of the standard stimulus. A felt tip ink pen was
used in drawing each of the B-G deviations to allow similar
line quality for each of the drawings. The placement of the
four drawings for each of the nine series was determined by
the Table of Random Numbers (Edwards, 1950).

The perceptual phase was designed to test Pascal and
Suttell's hypothesis that deviations in B-G performance are
not caused by faulty perceptual discrimination. If there are
no differences in perceptual discrimination among the four
groups, (if all four groups do not differ significantly in
their ability to pick the two figures which look alike), then
differences in B-G performance cannot be attributed to dif-
ferences in perceptual discrimination (the perceptual phase).

The Interpretative Phase

Each Bender Gestalt protocol was quantitatively scored
according to the standardized instructions of Pascal and Suttell.
This technique was utilized to discern if there were any gross
differences in Bender reproduction among the four groups of

subjects. If it is shown that there are no differences among the four groups in the motor and perceptual phases, then variation in reproduction of the Bender figures would be assignable to interpretative factors. The interpretative phase of this study, is thus concerned with determining if children with different cultural and/or socio-economic backgrounds differ in their reproductions of the Bender designs.

Identifying data for each child's Bender Gestalt test protocol was indicated on the back of each test sheet to assure subject and group anonymity. Scoring was delayed until all eighty subjects were tested and then all eighty protocols were thoroughly shuffled and mixed to further assure subject and group anonymity. Scoring was conducted by the author and another investigator, both of whom were thoroughly familiar with Pascal and Suttell scoring procedures. A product-moment correlation coefficient of .92 indicated the consistency of the examiner's scoring.

Pascal and Suttell developed their scoring system primarly for use with an adult population. However, these same authors (Pascal and Suttell, 1951), Goldberg (1957), and Simpson (1958) have demonstrated that this scoring system can be applied to children's Bender reproductions as well.

The Pascal and Suttell scoring system includes for the eight B-G figures, (design A being omitted from scoring consideration), 105 possible scoring deviations. An individual's score is computed by a summation of his scoring deviations

for each B-G design (1-8) together with a "configuration score" which concerns the relationship of each figure to each other and the placement of the figures on the test sheet. The total raw score is then translated into a standard (Z) score. Pascal and Suttell only present (Z) scores for adult populations, however, and do not present conversion tables for children. Hence, this study utilized the raw scores as an index of Bender performance in a similar fashion as did Pascal and Suttell (1951, p. 42) and Simpson (1958).

In order to analyze the components of the interpretative phase, and in an effort to determined some variables which may influence Bender Gestalt performance, a sexual symbols analysis and an associational analysis of the Bender Gestalt test performance of the four groups of subjects was carried out. Experimental evidence (Tolor, 1957, 1960; Tolor and Schulberg, 1962; Greenbaum, 1955), has indicated that the individual B-G figures have different meanings associated to them and that different subjects tend to view each B-G figure with a communality of meaning, although some controversy exists with the latter assumption (Suczek and Klopfer, 1952). It may well be, that individuals from different cultures will view the B-G figures differently as a result of their dissimilar experiences. Since the interpretative phase involves basically what the Bender Gestalt figures and the entire test situation mean to the individual, an analysis of the sexual symbolic and associational meanings of the B-G

figures for individuals from different cultural background
should prove useful in analyzing the interpretative phase,
and in determining how this phase influences the reproduction
of B-G designs.

Interpretative Phase Analysis I (Symbolic)

Each of the eighty children was individually shown a
series of seventy-two 4 inch by 6 inch white index cards upon
which were drawn seventy-two pen and ink line drawings. The
subject was told the following instructions: "I want you to
tell me which of the drawings I will show you remind you of
girls and ladies and which drawings remind you of boys and men.
Some of the cards may not remind you of anything. When this
happens I would still like you to tell me whether the drawing
reminds you of boys and men or whether it reminds you of girls
and ladies." These drawings were randomly ordered and pre-
sented to each subject in the same sequence.

The seventy-two cards fall into eight categories, each
category containing a total of nine drawings. The drawings
falling into the first six categories were selected from a
symbol test constructed by Lessler (1964). The first four
series of drawings contain symbols with obvious cultural con-
tent, each series according to Lessler being consistently
associated with one sex. In addition, each series was judged
to be either male or female according to Freudian symbolic
theory. These symbols were divided according to whether the

Freudian and cultural sexual referents were congruent or in-
congruent with each other. Thus, four groupings of nine draw-
ings each resulted: (1) Symbols with male Freudian meaning
and male cultural content, eg. a baseball bat. (2) Symbols
with female Freudian meaning and female cultural content,
eg. a pocket book. (3) Symbols with male Freudian meaning
and female cultural content, eg. a rolling pin. (4) Symbols
with female Freudian meaning and male cultural content, eg.
a baseball.

The last of the symbols selected from Lessler fall
into the categories of symbols with an agreed upon Freudian
meaning, but with the cultural content of the symbols missing
or ambiguous. These symbols fall into two categories: (5)
Symbols with male Freudian referents, but which do not look
like any discernible object. (6) Symbols with female Freudian
referents, but which do not look like any discernible object.

The final groupings of symbols fall into the following
categories: (7) Symbols selected from two sources (Ritzenthaler
and Peterson, 1956; Gibson, 1963) based on the Kickapoo Indian
culture. (8) A drawn replica of the Bender Gestalt designs.

Lessler's results indicated that sexual symbols are
complex stimuli (influenced by cultural meaning and Freudian
meaning), and that the sorting of symbols as either male or
female is consistent with the cultural referent when it is dis-
cernible and with the Freudian referent when the cultural re-
ferent is minimized. The consistency of Lessler's results for

individuals from different cultures and/or socio-economic class
had not been tested, however. By administering some of Less-
ler's symbols along with Kickapoo symbols to all four groups,
it would be possible to determine whether Freudian or cultural
determinants were the major influence in the sorting of sym-
bols into either male or female categories. If the results
are consistent with the literature, (Schonbar and Davitz,
1960; Barker, 1957; Lessler, 1962, 1964), it would indicate
that cultural referents are a major influence in determining
sexual categories. Since the B-G figures appear to be cul-
turally asexual it would be expected that the major sexual de-
terminant of these figures would be of a Freudian nature. If,
however, it can be ascertained that B-G designs have different
symbolic sexual meanings for the different cultures, it would
be expected that these meanings will influence the way in
which boys from different cultural and socio-economic environ-
ments would sexually sort the B-G designs and the manner in
which they perform on the test.

Interpretative Phase Analysis II (Associational)

Following the symbolic analysis task each Bender Ge-
stalt figure was presented individually to each subject. They
were given 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."

Each subject's associations to the Bender Gestalt designs was recorded and analyzed according to the following broad and relatively objective and descriptive system borrowed 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, eg. "small dots", or "circle and diamond."

4. Letters of 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.

CHAPTER III

RESULTS

Motor Phase

As stated earlier, Pascal and Suttell (1951) and
Billingslea (1948) believe Bender Gestalt performance to con-
sist of three interrelated phases: Motor, Perceptual, and
Interpretative. Pascal and Suttell (1951) further postulate
that B-G deviations among individuals of normal intelligence,
and free from cortical damage are a direct result of the in-
terpretative phase. In an effort to determine that the white
middle class, white low socio-economic class, Negro low socio-
economic class, and Kickapoo Indian boys do not differ signif-
icantly in motor performance, all of these subjects were asked
to copy four simple geometric designs (cross, square, vertical
diamond, horizontal diamond). Each individual reproduction
was scored as pass or fail by the writer and another investi-
gator, and a product-moment correlation coefficient of .94
indicated the consistency of scoring. The data were analyzed
by the Chi Square technique as shown in Table 2. Since no
statistically significant difference among groups for each set
of drawings was found, hypothesis one was accepted. This

finding suggests that middle class white, low class white, low class Negro, and Indian subjects perform in a similar manner with respect to motor (copying) ability, and that differences among the four groups on Bender Gestalt test scores cannot be said to be a result of differences in motor ability.

Perceptual Phase

In order to determine if the four groups of boys do not differ in their perceptual discrimination ability, all subjects were asked to select the two most similar B-G designs from a series of four, for each of the nine standard B-G figures. Scoring was simply a matter of assigning a pass for each correct perceptual match and a failure for each incorrect perceptual match, hence, the chi square technique was utilized.

TABLE 2

PERFORMANCE ON THE MOTOR PHASE BY THE
FOUR GROUPS OF SUBJECTS

	Cross	Square	Vertical Diamond	Horizontal Diamond
Middle Class White	20	20	20	18
Low Class White	20	20	20	16
Negro	20	20	19	19
Indian	20	18	19	18
Chi Square	.000**	6.17**	2.058**	2.405**

** Chi Square value significant at the five per cent level for three degrees of freedom is 7.8.

The results reveal that not one subject in any of the four groups made errors in his perceptual matchings, thus every boy chose the two B-G designs that looked most alike. It is evident from this finding that no group differences in perceptual discrimination as tapped by this technique were present and consequently hypothesis two was accepted. Hence differences on B-G test scores (as measured by the Pascal and Suttell scoring system) among the white middle class, white low class, Negro low class, and Kickapoo Indian boys cannot be attributed to visual discrimination differences among the four groups.

Interpretative Phase

Hypothesis three (the Interpretative Phase) states that white middle class, white low class, Negro low class, and Kickapoo Indian boys will not differ significantly in the Pascal and Suttell scores derived from their Bender Gestalt records. Since hypothesis one and two were confirmed, a rejection of hypothesis three would confirm the postulate advanced by Pascal and Suttell that deviations in B-G reproduction are assignable to interpretative factors. Moreover, significant statistical differences revealed among the four groups of subjects would strongly suggest that there are cultural differences on the Bender Gestalt test and that individuals from varied cultural and socio-economic background will perform differently on the Bender Gestalt test.

In order to determine if there was a significant statiscal difference among the four groups of boys, the Analysis of Variance technique was applied to the raw score data derived from the scoring of the Bender Gestalt reproductions by the Pascal and Suttell criteria for deviations. The results of this analysis are presented in Table 3. Inspection of this table reveals that the four groups of boys (A-1) differ significantly in their reproductions of the Bender Gestalt designs in terms of scorable deviations. It can also be seen that the designs (B-1) differ significantly among each other. These findings, in conjunction with the lack of significant interaction between designs and group membership ((A-1) (B-1)), suggest that although the designs vary in difficulty, the variation is about the same for all four groups of subjects.

TABLE 3

PERFORMANCE ON THE TOTAL BENDER GESTALT
TEST BY THE FOUR GROUPS

Variance Source	df	Sum of Squares	Mean Square	F	P
(A-1) Differences among groups	3	3119.12	1039.71	10.80	$<.01$
A(R-1)	76	7316.49	96.27		
(B-1) Differences among cards	8	1550.20	193.78	4.41	$<.01$
(A-1) (B-1) Interaction	24	825.60	34.40	.783	$>.05$
A(R-1) (B-1)	608	26693.76	43.90		

The results listed in Table 3 allow hypothesis three
to be rejected. It can thus be concluded that differences ob-
tained among the four groups of subjects did not result from
chance fluctuations in sampling, and that variations in cul-
tural and socio-economic background affect Bender Gestalt re-
production. The results of this phase of study further give
support to Pascal and Suttell's formulation that differences
in Bender reproduction may be assigned directly to interpre-
tative factors.

In psychological and educational measurement, the white
middle class is traditionally utilized as a comparison or
reference group and was so used in this study. Of interest
to this author is the question of whether individuals from
various cultural backgrounds perform similarly to white middle
class boys on the Bender Gestalt test. Further Analyses of
Variance were calculated in order to answer this question.
The results are revealed in Table 4 and indicate that there
was no significant difference in total B-G scores between
middle class white boys and low socio-economic class white
boys. On the other hand significant differences on B-G test
scores were revealed between the middle class whites and the
low socio-economic class Negroes and between the middle class
whites and the Kickapoo Indians. In each instance the white
middle class group evidenced better Bender protocols (as mea-
sured by the Pascal and Suttell scoring system), than the
comparison groups.

TABLE 4

COMPARISONS BETWEEN THE WHITE MIDDLE CLASS GROUP
AND THE LOW WHITE, NEGRO AND INDIAN GROUPS
ON TOTAL BENDER GESTALT SCORES

Design	Control	White Low Class	Negro Low Class	Indian
1	105	85	182	205
2	86	118	139	231
3	113	170	203	223
4	85	97	173	173
5	103	114	187	151
6	118	102	125	202
7	137	174	281	311
8	64	98	159	196
Configurational Analysis	100	147	143	159
Total Score	911	1105	1592	1851
Mean Score	45.550	55.250	79.6000	92.550
$\underline{F}$ Value		2.822	17.622	19.484
P		$>.05$	$<.01$	$<.01$

In an effort to investigate group differences on in-
dividual B-G designs, additional Analyses of Variance were
calculated with the results shown in Table 5. Only designs
I and II failed to reach the .05 level of significance. Thus
there were significant differences among the four groups of
subjects for the B-G designs III through VIII but no signif-
icant differences were indicated among the four groups on
designs I and II or on the configurational analysis of the
Bender Gestalt test.

TABLE 5

DIFFERENCES AMONG THE FOUR GROUPS OF SUBJECTS ON
EACH INDIVIDUAL BENDER GESTALT CARD AND THE
CONFIGURATIONAL ANALYSIS

	F Value	P
Design 1	1.33	$>.05$
Design 2	2.63	$>.05$
Design 3	5.04	$<.01$
Design 4	2.77	$<.05$
Design 5	3.65	$<.05$
Design 6	3.27	$<.05$
Design 7	4.47	$<.01$
Design 8	6.80	$<.01$
Configurational Analysis	1.23	$>.05$

While significant F scores on Bender Gestalt designs
III through VIII revealed significant differences among the
four groups, further Analyses of Variance were computed in an
effort to determine which comparison groups deviated signif-
icantly from the white middle class group on designs III
through VIII. The results of these calculations are shown
in Table 6.

Interpretative Phase Analysis I (Symbolism)

In order to elucidate some of the components of the
Interpretative Phase an attempt was made to investigate the
sexual symbolic qualities of the Bender Gestalt test for in-
dividuals from different cultures. Since sexual symbols are
generally considered to be complex stimuli composed of both
cultural and psychoanalytic properties, part of a sexual sym-
bol test developed by Lessler (1964) was administered to all

TABLE 6

COMPARISONS OF THE WHITE MIDDLE CLASS GROUP vs.
THE LOW WHITE, NEGRO, AND INDIAN GROUPS ON
BENDER GESTALT DESIGNS 3-8

Design	Groups	F Value	P
III	Control vs. Low White	5.44	$<.05$
	Control vs. Low Negro	10.76	$<.01$
	Control vs. Kickapoo Indian	13.32	$<.01$
IV	Control vs. Low White	.127	$>.05$
	Control vs. Low Negro	3.95	$>.05$
	Control vs. Kickapoo Indian	4.61	$<.05$
V	Control vs. Low White	.27	$>.05$
	Control vs. Low Negro	8.20	$<.01$
	Control vs. Kickapoo Indian	3.03	$>.05$
VI	Control vs. Low White	.323	$>.05$
	Control vs. Low Negro	.07	$>.05$
	Control vs. Kickapoo Indian	4.05	$>.05$
VII	Control vs. Low White	.74	$>.05$
	Control vs. Low Negro	7.42	$<.01$
	Control vs. Kickapoo Indian	11.53	$<.01$
VIII	Control vs. Low White	2.12	$>.05$
	Control vs. Low Negro	7.75	$<.01$
	Control vs. Kickapoo Indian	15.29	$<.01$

four groups. This was done in an effort to determine if in-
dividuals from different cultural and socio-economic back-
grounds were equally influenced by the cultural and psycho-
analytic properties of symbols. Lessler's test was also used
to determine whether the cultural or psychoanalytic character-
istics of the symbols had greater influence in the subject's
categorization of symbols as either male or female. Perhaps
such information might yield informative clues regarding

reasons for possible differences among the four groups in their sorting of the Bender Gestalt designs into male or female categories.

Since Lessler's instrument has not been widely used and has not been administered to individuals from different cultures, six categories of his symbols were tested in order to determine if the four groups used in this study confirmed Lessler's findings. On categories M- and F- in which the symbols carried no apparent cultural meaning and were influenced solely by shape as defined by psychoanalytic theory, the four groups did not confirm Lessler's hypothesis. An insignificant Chi Square value of 2.45 was found on those cards solely influenced by phallic shape (M-). On category F-, influenced solely by the feminine, round, shape of the figures, the four groups sorted such cards as male significantly beyond the .01 level (Chi Square = 9.34). Thus it appears that the four groups tested in this study are not able to sexually sort symbols consistent with Freudian theory. On symbols in which there were congruence between Freudian sexual meaning and cultural sexual meaning (MM and FF) and on symbols in which the psychoanalytic and cultural sexual referents were incongruent (MF and FM) significant results in favor of Lessler were found. Each of these four categories was significantly sorted in line with Lessler's findings far beyond the .01 level (FM / Chi Square = 344.45/, MF / Chi Square = 162.45/, MM / Chi Square = 480.20/, FF / Chi Square =

347.22/). These results mean that the four groups were able to sexually sort symbols consistently with Lessler's findings when the cultural content was obvious but unable to do so when cultural content was missing. Moreover, these results imply that symbols are sexually sorted according to cultural meaning but not according to psychoanalytic shape.

A comparison of the four group's performances on each of Lessler's categories as well as the Kickapoo Indian symbols was also investigated in an effort to show that groups with different cultural experience would sexually sort cards with various cultural loadings differently. It was found that Lessler's categories (M-, F-, FM, MF) and the Kickapoo Indian symbols were not sorted significantly different by the four groups, but on the other hand Lessler's symbols (MM, FF) were sorted significantly different by the four groups as shown in Table 7.

TABLE 7

COMPARISON OF THE FOUR GROUP'S SORTINGS OF SIX CATEGORIES OF LESSLER'S SEXUAL SYMBOL TEST AND OF SELECTED KICKAPOO INDIAN SYMBOLS INTO MALE AND FEMALE CATEGORIES

Category	Chi Square Value	P
M-	.462	$>.05$
F-	.422	$>.05$
FM	3.357	$>.05$
MF	3.522	$>.05$
MM	8.746	$<.05$
FF	8.883	$<.05$
Indian Symbols	5.629	$>.05$

The major source in sorting symbols into male and fe-
male categories appears to be the cultural meaning ascribed
to these symbols. Furthermore, differences in cultural back-
ground affect what is described as male or female as evidenced
by the finding that there were differences in the sorting of
categories MM and FF among the four groups. These findings
appear to suggest that the four different groups, each coming
from varying backgrounds, would tend to sort the B-G designs
into male or female categories differently if these designs
had different sexual meanings in each of the cultures investi-
gated.

Hypothesis four stated that the white middle class,
white low class, Negro low class and Kickapoo Indian boys
would not differ significantly in the way in which they sorted
the Bender Gestalt designs into male and female categories.
The Chi Square technique was employed to analyze this data.
Table 8 reveals that for each of the eight cards studied no
significant differences were found among the four groups in
their sorting of each Bender design into male and female cate-
gories. Hypothesis four was thus accepted.

A further statistical analysis was conducted to de-
termine if any individual B-G designs were sorted as being
either male or female by any of the four groups at a greater
than chance level. Inspection of Table 9 reveals that Bender
Gestalt card four was judged by the middle class white, low
white, and Indian boys as being female and that Bender Gestalt

Card five was judged to be male by the middle class white group.

TABLE 8

COMPARISON OF THE FOUR GROUP'S SORTING OF EACH BENDER GESTALT DESIGN INTO MALE AND FEMALE CATEGORIES

Bender Gestalt Design	Chi Square Value	P
1	1.066	>.05
2	3.600	>.05
3	.213	>.05
4	3.875	>.05
5	6.225	>.05
6	2.083	>.05
7	2.997	>.05
8	3.478	>.05

TABLE 9

AN ANALYSIS OF EACH OF THE FOUR GROUP'S SYMBOLIC CATEGORIZATION
OF THE BENDER GESTALT DESIGNS (1-8)

Bender Gestalt Design	Group	Chi Square Value	$\underline{P}$
1	Middle White	3.200	$>.05$
	Low White	.200	$>.05$
	Negro	.800	$>.05$
	Indian	1.800	$>.05$
2	Middle White	.800	$>.05$
	Low White	.800	$>.05$
	Negro	1.800	$>.05$
	Indian	.200	$>.05$
3	Middle White	.800	$>.05$
	Low White	1.800	$>.05$
	Negro	.800	$>.05$
	Indian	1.800	$>.05$
4	Middle White	7.200	$<.01$
	Low White	7.200	$<.01$
	Negro	1.800	$>.05$
	Indian	12.800	$<.01$
5	Middle White	12.800	$<.01$
	Low White	.200	$>.05$
	Negro	1.800	$>.05$
	Indian	1.800	$>.05$
6	Middle White	.200	$>.05$
	Low White	.000	$>.05$
	Negro	1.800	$>.05$
	Indian	3.200	$>.05$
7	Middle White	3.200	$>.05$
	Low White	.000	$>.05$
	Negro	.800	$>.05$
	Indian	.200	$>.05$
8	Middle White	1.800	$>.05$
	Low White	3.200	$>.05$
	Negro	.000	$>.05$
	Indian	.200	$>.05$

Interpretative Phase Analysis II (Associational)

In an attempt to discern whether individuals from various cultural and socio-economic background differ as to the categories into which their associations to the Bender Gestalt designs were placed, a descriptive and relatively objective instrument was developed and fully described in the Materials and Procedure Section. It was felt by this investigator that if differences in the categories of associations given to the Bender Gestalt test by the four groups were found, that it might prove to be useful in an investigation of the Interpretative Phase.

Each subject's associations to Bender Gestalt designs (1-8) were analyzed as to their meeting each one of the eleven categories on the associational scale. The data were analyzed via the Chi Square method and the results for differences among the four groups in associational categories on the entire B-G test shown in Table 10. These results indicate that

TABLE 10

COMPARISONS OF THE FOUR GROUP'S ASSOCIATIONS:
TOTAL BENDER GESTALT

Association Scale Category	Chi Square	P
1. Rejection	18.666	$< .01$
2. Non-Specific Response	3.248	$> .05$
3. Descriptive Response	2.506	$> .05$
4. Letters of the Alphabet	.508	$> .05$
5. Part of Design	9.801	$< .05$
6. Integrated Response	12.760	$< .01$
7. Inappropriate Response	6.971	$> .05$
8. Movement	4.485	$> .05$
9. Human Content	2.339	$> .05$
10. Animal Content	6.063	$> .05$
11. Object Content	10.678	$< .05$

four categories, namely rejections, associations which took

into account only part of the design, associations which were

integrated into a meaningful whole, and object associations

were significantly different among the four groups.

A further breakdown of the data reveals which of the

three experimental groups differed significantly from the white

middle class group on these four associational categories.

Table 11 clearly shows that on the category of rejections, both

the low socio-economic class whites and the Kickapoo Indians

differed significantly from the white middle class group in

the number of rejections given to the total B-G test; that on

the category of associations which took into account only part

of the design both the low class whites and the Kickapoo Indians

again differed significantly from the white middle class group;

TABLE 11

COMPARISONS OF THE WHITE MIDDLE CLASS GROUP vs. THE LOW WHITE,
NEGRO, AND INDIAN GROUPS ON THE SIGNIFICANT ASSOCIATIONAL
CATEGORIES OF THE TOTAL BENDER GESTALT TEST

Groups	Associations Scale Category	Chi Square Value	P
1.			
White Middle Class vs. Low White	Rejection	10.141	<.01
White Middle Class vs. Negro		1.533	>.05
White Middle Class vs. Indian		11.032	<.01
2.			
White Middle Class vs. Low White	Part of	5.710	<.05
White Middle Class vs. Negro	Design	.026	>.05
White Middle Class vs. Indian		4.739	<.05
3.			
White Middle Class vs. Low White	Integrated	.615	>.05
White Middle Class vs. Negro	Response	10.208	<.01
White Middle Class vs. Indian		5.650	<.05
4.			
White Middle Class vs. Low White	Object	9.895	<.01
White Middle Class vs. Negro	Content	3.221	>.05
White Middle Class vs. Indian		7.297	<.01

that on the category of meaningfully integrated associations
the low socio-economic class Negroes and the Kickapoo Indians
differed significantly from the middle class whites; and that
on the category of object associations the low white boys and
the Kickapoo Indian boys differed once more from the white
middle class group.

The white middle class group exhibited the fewest number
of rejections, and the largest frequency of integrated responses,
object associations and association using part of the design.
The Indians produced the largest number of rejections, and the
Negroes gave the fewest number of meaningfully integrated responses.

An analysis of the data was further broken down into
differences among the four groups in associational categories
for each of the individual Bender Gestalt designs. The data
(Table 12) indicate that only those associations falling into
the category of inappropriate responses differentiated the
four groups on design one. Additional statistical analysis

TABLE 12

COMPARISON OF THE FOUR GROUP'S ASSOCIATIONSL DESIGN I

Associational Scale Category	Chi Square Value	P
Rejection	1.111	$>.05$
Non-Specific response	.000	$>.05$
Descriptive response	.439	$>.05$
Alphabet	.000	$>.05$
Part of the design	2.424	$>.05$
Integrated response	2.416	$>.05$
Inappropriate response	9.175	$<.05$
Movement response	.000	$>.05$
Human content	3.038	$>.05$
Animal content	2.105	$>.05$
Object content	1.571	$>.05$

disclosed a significant Chi Square between the white middle class and low white group for the category of inappropriate responses on design one, with no significant differences between the Negroes and white middle class or Indians and white middle class as Table 13 illustrates.

TABLE 13

COMPARISON OF THE WHITE MIDDLE CLASS GROUP vs. THE LOW WHITE, NEGRO, AND INDIAN GROUPS ON THE SIGNIFICANT ASSOCIATIONAL CATEGORIES FOR DESIGN I

Groups	Association Scale Category	Chi Square Value	P
Middle Class White vs. Low White	Inappropriate Response	4.444	<.05
Middle Class White vs. Negro		1.026	>.05
Middle Class White vs. Indian		.000	>.05

For design II of the Bender Gestalt, significant group differences were found on three categories: rejection, meaningfully integrated responses, and responses containing human content. These results are presented in Table 14.

TABLE 14

COMPARISON OF THE FOUR GROUP'S ASSOCIATIONS: DESIGN II

Associational Scale Category	Chi Square Value	P
Rejection	9.592	<.05
Non-specific response	3.810	>.05
Descriptive response	5.029	>.05
Alphabet	2.051	>.05
Part of the design	.000	>.05
Integrated response	18.462	<.01
Inappropriate response	.784	>.05
Movement response	6.316	>.05
Human content	10.489	<.05
Animal content	6.154	>.05
Object content	2.552	>.05

Table 15 indicates which particular groups differed from the middle
class group on the significantly discriminating categories
for design II. Statistically significant differences on the
category of rejection were shown between the middle class
white group and the low socio-economic class white group. All
three comparison groups differed significantly from the middle
class white group in the number of integrated associations,
while the low white and low Negro socio-economic class boys
differed significantly from the white middle class boys in
the number of human content associations given to design II.

TABLE 15

COMPARISON OF THE WHITE MIDDLE CLASS GROUP vs. THE LOW WHITE,
NEGRO, AND INDIAN GROUPS ON THE SIGNIFICANT ASSOCIATIONAL
CATEGORIES FOR DESIGN II

Groups	Association Scale Category	Chi Square Value	P
Middle Class White vs. Low White	Rejection	4.329	<.05
Middle Class White vs. Negro		1.026	>.05
Middle Class White vs. Indian		2.057	>.05
Middle Class White vs. Low White	Integrative Response	6.400	<.05
Middle Class White vs. Negro		12.379	<.01
Middle Class White vs. Indian		12.379	<.01
Middle Class White vs. Low White	Human Content	5.714	<.05
Middle Class White vs. Negro		5.714	<.05
Middle Class White vs. Indian		1.558	>.05

Inspection of Table 16 reveals significant differences
among the four groups in the number of associations falling
into the descriptive response category on design III while
Table 17 shows that both the Kickapoo and low socio-economic
white boys differed significantly from the middle class whites

on the descriptive response category of associations on design III.

TABLE 16

COMPARISON OF THE FOUR GROUP'S ASSOCIATIONS: DESIGN III

Associational Scale Category	Chi Square Value	P
Rejection	3.604	>.05
Non-Specific response	.000	>.05
Descriptive response	9.175	<.05
Alphabet	.000	>.05
Part of the design	.000	>.05
Integrated response	1.067	>.05
Inappropriate response	4.227	>.05
Movement response	.000	>.05
Human content	3.038	>.05
Animal content	2.975	>.05
Object content	2.759	>.05

TABLE 17

COMPARISON OF THE WHITE MIDDLE CLASS GROUP vs. THE LOW WHITE, NEGRO, AND INDIAN GROUPS ON THE SIGNIFICANT ASSOCIATIONAL CATEGORIES FOR DESIGN III

Groups	Association Scale Category	Chi Square Value	P
White Middle Class vs. Low White	Descriptive	4.444	<.05
White Middle Class vs. Negro	Response	2.057	>.05
White Middle Class vs. Indian		4.444	<.05

On designs IV, V, and VII of the Bender Gestalt test, no statistically significant differences in associational categories among the four groups were found. Table 18 illustrates this.

TABLE 18

COMPARISON OF THE FOUR GROUP'S ASSOCIATIONS: DESIGN IV, V, VII

Associational Scale Category	Chi Square Value[a]	Chi Square Value[b]	Chi Square Value[c]	P
Rejection	6.580	2.347	1.010	>.05
Non-Specific response	2.051	2.051	6.154	>.05
Descriptive response	5.760	2.347	3.038	>.05
Alphabet	2.051	1.111	.000	>.05
Part of the design	3.409	4.114	3.810	>.05
Integrated response	2.003	1.212	6.869	>.05
Inappropriate response	3.949	6.385	5.490	>.05
Movement response	2.379	6.154	.457	>.05
Human content	.952	6.154	3.038	>.05
Animal content	4.703	6.316	3.038	>.05
Object content	.417	1.648	2.581	>.05

[a]Design IV   [b]Design V   [c]Design VII

Table 19 indicates that on design VI the four groups of subjects varied in the number of responses fitting into the object association category. Further statistical analyses revealed that all three experimental groups differed significantly from the middle class group as Table 20 illustrates.

TABLE 19

COMPARISON OF THE FOUR GROUP'S ASSOCIATIONS: DESIGN VI

Associational Scale Category	Chi Square Value	P
Rejection	2.347	>.05
Non-Specific response	6.154	>.05
Descriptive response	5.479	>.05
Alphabet	2.424	>.05
Part of the design	.000	>.05
Integrated response	6.875	>.05
Inappropriate response	6.154	>.05
Movement response	3.810	>.05
Human content	3.038	>.05
Animal content	1.732	>.05
Object content	7.912	<.05

TABLE 20

COMPARISON OF THE MIDDLE CLASS WHITE GROUP vs. THE LOW WHITE,
NEGRO AND INDIAN GROUPS ON THE SIGNIFICANT ASSOCIATIONAL
CATEGORIES FOR DESIGN VI

Groups	Association Scale Category	Chi Square Value	P
Middle Class White vs. Low White	Object	4.800	<.05
Middle Class White vs. Negro	Content	7.619	<.01
Middle Class White vs. Indian		4.800	<.05

For design VIII only the associations falling into
the category of inappropriate responses differentiated the
four groups. Table 21 illustrates this finding while Table
22 reveals both the Negro and Indian groups to differ signif-
icantly from the white middle class group on this category.

TABLE 21

COMPARISON OF THE FOUR GROUP'S ASSOCIATIONS: DESIGN VIII

Association Scale Category	Chi Square Value	P
Rejection	4.684	>.05
Non-Specific response	3.810	>.05
Descriptive response	3.810	>.05
Alphabet	3.038	>.05
Part of the design	3.922	>.05
Integrated response	5.556	>.05
Inappropriate response	12.394	<.01
Movement response	.000	>.05
Human content	.000	>.05
Animal content	2.051	>.05
Object content	4.786	>.05

Hypothesis five states that Kickapoo, white middle
class, white low socio-economic class, and Negro low socio-
economic class boys will not differ significantly in their

TABLE 22

COMPARISON OF THE WHITE MIDDLE CLASS GROUP vs. THE LOW WHITE,
NEGRO AND INDIAN GROUPS ON THE SIGNIFICANT ASSOCIATIONAL
CATEGORIES FOR DESIGN VIII

Groups	Association Scale Category	Chi Square Value	P
Middle Class White vs. Low White	Inappropriate	1.290	>.05
Middle Class White vs. Negro	Response	7.059	<.01
Middle Class White vs. Indian		7.059	<.01

associations (analyzed via a descriptive and relatively ob-

jective evaluation system) to the total Bender Gestalt test.

An analysis of the data reveals hypothesis five to be rejected

for associational categories of rejections, associations which

took into account only part of the design, associations which

meaningfully integrated the total design and object content

associations. Thus out of the eleven associational categories

which were analyzed, a total of four rejected hypothesis five.

CHAPTER IV

DISCUSSION OF RESULTS

The major aim of this dissertation as previously stated, was to examine the widely held assumption that the Bender Gestalt test is a culture-free test. It follows from this assumption that a sampling of individuals from different cultural and socio-economic backgrounds would perform somewhat similarly on the Bender Gestalt test. A second aim of this study was the investigation of Pascal and Suttell's postulates that three factors are involved in the reproduction of the Bender Gestalt: (1) sensory perception, (2) interpretation, and (3) motor reproduction. These two purposes for investigating the Bender Gestalt test actually blend together into one as the reader will see shortly.

Pascal and Suttell assign deviant Bender Gestalt reproduction in individuals of normal intelligence without demonstrable brain damage, to interpretative factors which obtrude between sensory perception and motor reproduction. They contend that the ability to perceive the Bender designs and the ability to reproduce them, play only an incidental role in Bender Gestalt performance. Differences, then,

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become a matter of what these authors term an "attitude," that
is, what the B-G designs and the entire testing situation mean
to the individual with respect to his past experience. In
light of Pascal and Suttell's hypothesis it soon becomes ap-
parent that individuals from dissimilar environments should
perform differently on the Bender Gestalt test. The purpose
of this dissertation then was to confirm Pascal and Suttell's
belief in the importance of the interpretative phase and to
simultaneously demonstrate that due to this, individuals from
diverse cultural and socio-economic backgrounds would perform
differently on the Bender Gestalt test.

Eighty boys of approximately equal age, grade, and IQ
were selected from four different cultures. The groups con-
sisted of twenty white boys from a middle socio-economic class
environment, twenty white boys from a low socio-economic class
environment, twenty Negro boys from a low socio-economic class
environment, and twenty Kickapoo Indian boys also from a low
socio-economic environment. All eighty subjects were asked
to copy four simple geometric figures; a cross, a square, a
vertical diamond, and a horizontal diamond in order to deter-
mine if the four groups differed in copying or motor ability.
The findings support hypothesis one concerning differences in
motor performance among the four groups of boys. Generally
speaking, the differences found among the four groups for
the four simple geometric figures can be attributed to chance.

On the perceptual phase, no significant differences were found among the four groups in visual discrimination ability. These findings were consistent with the formulations of Pascal and Suttell, corroborating hypothesis two. The evidence indicates that all four groups of boys perceived the Bender Gestalt designs similarly.

Significant statistical differences were found among the four groups in the magnitude of scorable deviations on their Bender Gestalt protocols analyzed via the Pascal and Suttell scoring system. Hypothesis three was thus rejected. Using the white middle class boys as a reference point for comparing Pascal and Suttell scorable deviations for each of the other three groups, it was found that significant differences existed between the middle class and low class Negroes and between the middle class and Kickapoo Indians on their Bender Gestalt test scores. No significant differences were found between the middle class whites and low socio-economic class white boys on total B-G test scores, although here as in the first two instances the white middle class achieved better (lower) Pascal and Suttell scores.

Affirmation of hypothesis one and hypothesis two indicates that all four groups did not differ significantly in motor (copying) ability or visual acuity. This implies that the differences among groups in Pascal and Suttell scores on the Bender Gestalt test could not be a result of divergent motor and/or perceptual phase ability among the four groups

but instead was a direct result of interpretative factors.

This finding was therefore consonant with the postulates of Pascal and Suttell and consistent with the few studies conducted in this area previously mentioned (Kleinman, 1955; Niebuhr & Cohen, 1956; Stoer, Corotto, & Curnutt, 1965; Simpson, 1958). Moreover the finding that individuals from divergent environments function differently on the B-G has rather profound significance in Bender Gestalt interpretation as will be discussed later.

While the importance of the interpretative phase as the major influential variable in Bender Gestalt reproduction was confirmed by the results mentioned above, an indication of how this phase operated still was lacking. A further investigation was undertaken to try and delineate what it was about the Bender Gestalt designs that appeared to influence the varied Pascal and Suttell scores found among the four groups of subjects.

Tolor (1962, pp. 459-462) indicated that a symbolic and associational analysis of the Bender designs would in part yield important information in the understanding of Bender Gestalt deviations. With this in mind and with the understanding that the interpretative process includes what the B-G test stimuli mean to the individual, a symbolic and associational analysis of the Bender designs was conducted in an effort to further understand the interpretative phase. Hypothesis four, the symbolic analysis will be discussed first.

It has been suggested by several investigations
(Schulberg & Tolor, 1962; Tolor, 1960) that the basic stimu-
lus properties of the B-G test material is meaningfully per-
ceived in rather characteristic ways. Hutt and Briskin
(1960, p. 67) have similarly discussed certain B-G designs as
having phallic qualities and others as being representative
of the female object. Thus according to Hutt and Briskin,
figure eight of the Bender has phallic qualities because of
the outer hexagon, while figure five (a semicircle of dots
with a secant) is hypothesized as symbolizing the "mother-
surrogate" figure, although the secant is believed to have
phallic characteristics. A recent study by Goldfried and
Ingling (1964), however, offered little empirical support for
the majority of Hutt and Briskin's hypothesized symbolic in-
terpretations of the Bender figures. These authors went on
to say that little support was found for the existence of any
". . . "universal" hypothesized symbolic meanings among in-
dividuals on the B-G test." (Goldfried and Ingling, 1964,
p. 190)

The questionable status of a universal symbolic under-
standing of the Bender prompted this author to investigate
possible differences in symbolism elicited by the B-G cards
existing across different cultural and socio-economic classes.
A symbol test developed by Lessler (1964) was used in con-
junction with the B-G test to better ascertain what influenced
the placing of the Bender designs into male or female cate-
gories. In order for differences to appear among cultures in

the sexual categorization of Bender figures, the cultural
meanings of the Bender would have to be more potent than the
hypothesized universal variable of psychoanalytic shape. An
analysis of Lessler's test demonstrated the importance of the
cultural meanings of symbols as the apparent major influence
in sexual symbolic categorization. It further showed that
differences between cultures occurred in the categorization
of cultural symbols into male or female groupings. Moreover
an inspection of the data revealed a complete inability in
the subjects to sexually sort symbols according to psycho-
analytic theory. It follows then, that if the Bender designs
had different sexual cultural meanings for the four groups of
subjects used in this study, that an analysis of the data
would have revealed significant differences among the groups.
Unfortunately no statistically significant differences were
found and hypothesis four was accepted.

Several hypotheses can be formulated, however, in re-
gard to the above results. It may well be of course that the
Bender designs were seen similarly by the four groups. While
all four groups do come from quite varied environments and
backgrounds they are all part of the American culture and do
share many comparable experiences. It might also be that a
particular group did view the figures differently, but purely
by chance the sexual classification of these perceptions par-
alleled those of the other groups and thus was masked by this
dichotomous sorting. An observation of the content associations

in the succeeding associational analysis of this dissertation,
however, does not seem to support this possibility. It appears
then that the sexual symbolic analysis of the four groups of
boys did not provide discernable clues into the functioning
of the interpretative phase or into reasons for the varied
Pascal and Suttell scores on the B-G tests of individuals from
different cultures and socio-economic environments. However,
since there were a number of consistent sortings of the B-G
designs into male and female categories, it does appear that
the sexual symbolic stimulus properties of the Bender are in-
fluential. Precisely how this influence operates, though,
could not be determined from the available data.

The second and final segment in the analysis of the
interpretative phase deals with an associative analysis of the
subject's responses to the Bender Gestalt designs. Each in-
dividual's associations were analyzed via a descriptive, and
relatively objective classification system borrowed in part
from Tolor (1957). This system contains eleven categories
and each subject's associations were analyzed regarding its
appropriateness for inclusion into each one of the eleven
categories. With the exception of the content categories
(animal, human, object) the other eight categories actually
represent varying levels of ego strength in the subject's
dealing with the B-G stimuli. The categories then seem to
measure a continuum of the individual's ego strength and in-
volvement on the B-G test and also measure varying degrees of

success in dealing with ambiguous, unfamiliar material. Thus the category of rejection represents perhaps the lowest level of dealing with the Bender stimuli. Such a response probably indicates a strong resistance to the qualities of a particular Bender design or if shown throughout the test probably means the entire situation was extremely threatening to the subject and he took the "easy way out." The next highest level of response deals with those associations falling into the non-specific response category. Into this grouping fall all those associations which could be applied equally well to any or all of the B-G designs such as the response "a drawing." It is obvious that such an association entails more energy and more ego involvement than a rejection, but yet this still is a rather weak, ineffectual attempt at dealing with the stimulus. Contrasted with this latter category of associations are those associations which utilize the entire Bender design in a well integrated response of good form. Such an association as this requires the full involvement of the subject and indicates a desire to do one's best on the task. Good reality testing is of course a prerequisite for well integrated responses of good form. The meanings of these categories of associations should thus be evident to the reader. Such categories as already mentioned together with others such as inappropriate responses, movement responses, and descriptive responses present a rather rich and meaningful method of comparing the associations of individuals to the Bender Gestalt test. Likewise significant

differences in the number of associations falling into particular categories among the four groups of subjects could prove valuable in the explanation of the interpretative phase and in the attempt to discern why boys from different cultural and socio-economic environments perform differently on the Bender Gestalt test.

Hypothesis five stated that the four groups of boys used in this study would not differ significantly in the associational categories evoked by the entire B-G test as analyzed via the method explained above. Hypothesis five was rejected for four out of the eleven categories; namely the categories of rejections, use of only part of the design, meaningful integration and object content. Rejection of this hypothesis suggests that the four groups of subjects were differentially affected by the B-G test stimuli.

An attempt was made to better understand the significance of what differences on these four associational categories among groups implied. With this in mind a comparison was made between the middle class group and the remaining three groups on each of the four significant association categories. It was discovered that both the low class white boys and the Kickapoo Indian boys differed significantly from the white middle class boys on the number of rejection associations given to all eight Bender designs analyzed. Since the middle class white boys had significantly better Bender Gestalt protocols than the Kickapoo Indian boys it would be expected that

this latter group would have more difficulty dealing with such associations. This seems plausible for two reasons. One is that the Indians experienced the B-G stimuli, for whatever reasons, as threatening and thus chose to remove themselves from the testing situation as quickly and easily as possible. A second possibility centers on the traditional reticence of the Kickapoo Indians. A great deal more time was needed to establish rapport with this group than the others, and although the author encountered a great deal of success in this area, much of the time the Indian boys retained a certain emotional noninvolvement. This distance between tester and testee seemed to involve more than the generally observed difficulties between authority figure and young child and seemed to entail also a certain racial significance (white vs. red man). Thus either the test stimuli, the test situation, or perhaps both factors appear to be negatively influencing Kickapoo performance.

It would seem that similar differences would occur between the controls and low class Negroes since they too are a minority group who also did significantly poorer on the Bender Gestalt test, but such was not the case. It appears that the Negroes may experience the B-G test and entire testing situation in an entirely different manner than the Indians, or perhaps they were able to mobilize their responses to a higher degree and better face the testing situation. As for the low socio-economic class whites, another variable seemed to influence their high number of rejection associations. This

group seemed to experience a great deal more trouble verbaliz-
ing on the associational analysis than did the middle class
white group. On the Bender Gestalt test no verbalization is
required and no significant differences were found between
middle class and low class whites.

On those associations utilizing only part of the de-
sign or on those utilizing both parts of the design in an non-
integrated fashion, significant differences were found between
the white middle class group and the low class white and Kick-
apoo Indian boys. Once more no significant difference was
found between Negroes and middle class whites. Although no
difference was found here the quality of responses within this
category was appreciably varied between groups. The middle
class group's associations falling into this category were
almost exclusively limited to good responses to one part of
the design. The Negroes on the other hand consistently at-
tempted to integrate incongruous elements into one associa-
tion on this category rather than deal only with one part of
the design stimulus. Once again, differences between groups
in their style and approach to handling the Bender stimuli
can be seen.

In those associations falling into the category of
meaningfully integrated responses, results consistent with
expectations were evidenced. The ability to look at a Bender
Gestalt design and to associate a well integrated response to
it is a task requiring high ego strength, and some degree of

concentration. Both Bender and Pascal and Suttell consider impairment of the gestalt function to be related to the integrated capacity of the organism, the ego. The significantly fewer number of meaningfully integrated response associations to the Bender by both Negroes and Indians seems to add credence to these authors beliefs since these latter groups performed in a consistently poorer fashion on the B-G than both groups of white boys.

The final grouping of associations differentiating the groups is the category of object associations. Little information regarding the interpretative phase is actually provided by this category. Its main contribution lies in the fact that these content responses are often well structured and generally well formulated responses. As expected the middle class boys produced more of these responses than any other group.

The results and preceding discussion emphasize the importance of considering an individual's socio-economic, and cultural background before evaluating a Bender Gestalt record. Large and significant differences were found on the magnitude of scorable deviations on the Bender between white boys from a middle class environment and Negro boys from a low socio-economic class environment and between white middle class boys and Kickapoo Indian boys. In using the Bender Gestalt test indiscriminately with individuals from different cultures there is implicit the hypothesis that the Bender Gestalt cards

present a situation that is cross-culturally equivalent and that responses to these equivalent situations are therefore cross-culturally comparable. Thus Hutt and Briskin (1960) make the statement that distortion and rotation on the B-G is ". . . regarded as evidence of pathologic functioning." (p. 62) Moreover ". . . the repetitive presence of one or more of these factors is to be regarded as prima facie evidence of a psychotic reaction . . ." (p. 62) Statements such as these do not lend themselves to the interpretation of the Bender protocols of the Negro and Indian boys tested in this study, however. Both of these groups of boys produced many more such "psychotic" responses on the Bender than did the two white groups, but each of the Negro and Indian boys was functioning well in line with the criteria used in selecting all eighty subjects. It seems probable that Hutt and Briskin established their hypotheses and projective use of the Bender on middle class subjects. The bases for the Negroes' and Indian's appreciably greater incidence of rotations and distortions appear to be due to major cross-cultural differences in these two latter group's perceptual interpretation of the Bender designs and test situation. Thus it appears that the Bender is reflecting a cultural bias in favor of individual's from a white middle class environment. Similarly the use of cutoff scores on the B-G test such as Pascal and Suttell suggest, as a device to screen and differentiate the psychiatric ill from the mentally stable seems to be invalidated when used

with individuals from different environments. The high scores (poor Bender Gestalt records) achieved by the Negro and Indian boys tends to give a false evaluation of these individual's stability and general mental health. Thus while the B-G test is constructed to give the subject relative freedom to respond as he likes, it is evident that the cultural structuring of an individual's response is indeed quite influential.

The psychologist must consequently be alert to detect the influence of cultural differences in the modifcation of response patterns on the Bender Gestalt test for individuals from different cultures. The meaning of the stimulus material used in the Bender cannot be assumed to be cross-culturally equivalent. The Bender cards become part of the subject's culture as soon as he enters into the test situation, and they have his meanings, not that of the tester's culture. Thus the subject is being compared to people not the same, and his protocol although identical to another's from a different culture may in fact mean altogether different things.

CHAPTER V

SUMMARY AND CONCLUSIONS

It has been suggested by Lauretta Bender (1938) and others that cultural differences do not exist in Bender Gestalt performance. After a comprehensive review of Bender Gestalt literature, however, Tolor and Schulberg (1963), stated that the precise role of cultural factors in Bender Gestalt functioning is unknown. He concluded that the few studies in this area were inconclusive and that further research elucidating this problem was vital. The primary reason for this study, then was to investigate whether the Bender Gestalt test is truly a "culture-free" test as so many of its proponents believe.

At the same time a further exploration of Pascal and Suttell's (1951) hypotheses was carried out. These authors postulate three factors essential to the reproduction of the Bender Gestalt designs, namely sensory perception, interpretation, and motor reproduction. Pascal and Suttell maintain that deviant reproduction on the Bender is a function of interpretative factors which obtrude between the ability to perceive the Bender designs and the motor ability involved to

reproduce them. They note that the interpretative process includes what the Bender Gestalt test stimuli and the total test situation mean to the individual. For Pascal and Suttell then, what is really being measured by the Bender in individuals free of demonstrable brain damage with normal intelligence is some factor other than the ability to perceive and reproduce the figures. The basis for Bender deviations is instead connected with what the test and the test situation mean to the individual. It would be expected then that individuals from different environmental and cultural backgrounds would perform differently on the Bender because of their varied milieu and due to the importance of the interpretative phase.

Eighty third grade boys of average intelligence and judged to be free from emotional difficulties were selected for use in this study. The subjects came from four different cultural and socio-economic backgrounds. The testing population consisted of twenty middle class white boys, twenty low socio-economic class white boys, twenty low socio-economic class Negro boys, and twenty Kickapoo Indian boys.

All four groups were exposed to identical experimental conditions. In order to show that the four groups did not differ in motor ability, each group was asked to copy four simple geometric figures (cross, square, vertical diamond, horizontal diamond). Following the motor phase each individual was administered the Bender Gestalt test under standard

testing instructions. At the completion of the Bender each individual was shown nine sets of stimulus figures, one set for each of the individual Bender designs. Each set contained an actual Bender design and three varying degrees of deviations of the standard stimulus. On each of the nine sets the subjects were told to pick the two designs that looked most alike. This segment of testing, (the perceptual phase), was conducted in an effort to show that the four groups did not differ in perceptual discrimination ability.

The results of this study support Pascal and Suttell's hypothesis that deviations in Bender performance are a result of interpretative factors. Hypothesis one, that there would be no differences in motor ability among the four groups was confirmed. Hypothesis two, that there would be no differences in perceptual ability among the four groups was also confirmed. Hypothesis three,that there would be no significant differences among the four groups on the total Bender test scores as measured by the Pascal and Suttell scoring system was rejected. Thus, since the four groups were shown to exhibit no significant differences in motor, or perceptual discrimination ability it follows that differences among the four groups of boys in Bender Gestalt performance are assignable to interpretative factors. Furthermore, significant differences among the four groups in Bender performance illustrates that the Bender Gestalt test is indeed not a so called "culture-free" test.

In an effort to further investigate the interpretative phase, and in an effort to determine some of the variables which might influence performance on the Bender Gestalt test, a two fold analysis was undertaken. The first investigation was a sexual symbolic analysis of the Bender Gestalt test. Following the administration of the perceptual phase each subject was shown a series of 72 cards and asked to sort them into either male or female categories. These cards included eight separate categories, six of which were borrowed from a symbol test by Lessler (1964), one which consisted of Kickapoo Indian symbols, and one which was a replica of the Bender Gestalt test. The first seven categories were used as a tool to better understand what influenced the sexual categorization of a symbol. Hypothesis four specifically concerned the four groups sexual sorting of the Bender. It was hypothesized that the four groups of boys would not sexually sort the Bender in significantly different ways. A statistical analysis of the data revealed insignificant differences among the four groups and so hypothesis four was accepted.

The second investigation of the interpretative phase was an associational analysis. Each subject was asked to associate to the Bender and these associations were analyzed via a descriptive and relatively objective scale. Significant differences among the groups were found on four out of the eleven categories of associations of the scale. It appears then, that the associative meaning of the Bender was different

for the four groups, suggesting that the Bender Gestalt test
meant different things to the different groups.

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

1. Middle class white, low socio-economic class white,
low socio-economic class Negro, and Kickapoo Indian boys do
not differ significantly in copying ability.

2. Middle class white, low socio-economic class white,
low socio-economic class Negro, and Kickapoo Indian boys do
not differ significantly in discrimination in the perceptual
phase of the Bender Gestalt.

3. Middle class white, low socio-economic class white,
low socio-economic class Negro, and Kickapoo Indian boys
d i f f e r significantly in their reproductions of the Bender
Gestalt designs.

4. Deviant performance on the Bender Gestalt designs
may be assigned to interpretative factors.

5. The sexual properties of the Bender Gestalt test
as analyzed by having the subjects rate them as either male
or female, appears to be similar among the four groups of
subjects.

6. The four groups of subjects tend to associate to
the Bender Gestalt test in uniquely different ways.

7. The Bender Gestalt test is not a "culture-free"
test. Cultural and socio-economic background appear to signif-
cantly affect Bender Gestalt reproduction.

Implications for Research

A number of interesting ideas for future study have
arisen out of this research. Since part of the interpretative
phase consists of test attitude and what the entire testing
situation means to the individual, a comparison study utilizing
two testers might prove enlightening. It could be that the
presence of a white tester with a minority group influenced
this group's reproductions. By using two testers, one white,
and one from the minority group, and by using two matched groups
of such children, this influence could be determined.

Another area of interest in determining the effect of
culture upon Bender performance would be a comparison study
of individuals from one culture in various stages of assimi-
lation. Such a movement can be seen for example among the
Kickapoos. Three varying degrees of assimilation into the
American culture exists with these Indians, the most accul-
tured group living in Kansas, the least acculturated group
residing in Mexico, and the middle group remaining in Okla-
homa. The effect, then of cultural deviance upon the Bender
Gestalt test could be tapped from such a study.

A further investigation into the interpretative phase
could of course yield additional information regarding the
specific factors affecting Bender performance. If the speci-
fic scorable deviations on the Bender as scored by the Pascal
and Suttell scoring system were compared for different cultures,

a greater understanding of interpretative differences between groups might be achieved. Thus a particular Bender Gestalt record scored by the Pascal and Suttell scoring system has a possible 105 scorable deviations. These deviation bear different qualitative meanings, however, and an investigation of differences not only in total Pascal and Suttell scores but on qualitative differences on Bender protocols between groups might prove quite fruitful.

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APPENDIX

BEHAVIORAL CHECKLIST

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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.