A study of specific stimulus qualities in Freudian dream symbolism.

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A Study of Specific Stimulus Qualities in Freudian Dream Symbolism

by

Jane Harris

B.A., University of Toronto

1971

A Thesis Submitted to the Faculty of Graduate Studies through the Department of Psychology in Partial Fulfillment of the Requirements for the Degree of Master of Arts at the University of Windsor

Windsor, Ontario, Canada

1973
ABSTRACT

The Freudian hypotheses that the shape of a symbol is a major determinant in assigning gender to it and that sexual symbols derive meaning from their similarity in form to both the genitals and general body contour were tested using a bi-polar rating scale. It was discovered that both the "angular"-"rounded" qualities of a symbol representing general body contour and the "containing"-"elongated" qualities representing the genital shape of males as compared to females were significant stimulus dimensions in assigning gender -- a finding verifying the Freudian hypothesis. Secondly, it was discovered that those qualities of a symbol representing the general body contour were a stronger referent in assigning gender than these dimensions presumed to represent the shape of the genitals. It was speculated that this second finding was due either (a) to the greater visibility of the body in human interaction or (b) to the fact that those stimulus dimensions representing body contour presented the subject with a less threatening means of symbolizing sexuality.
ACKNOWLEDGEMENTS

I would like to thank Dr. Frank Auld, the chairman of my thesis committee, for his invaluable suggestions, guidance and support, and Drs. J. DeVillers and R. Fehr, the members of my committee, for their time and assistance.

Also I gratefully acknowledge the help of Ms. Helen Wolfe, Ms. Ginny Bartle, Mr. Cary Steinman and all those who participated in my study.
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The study of symbols and symbolic formation has been an area of major interest to philosophers, linguists and psychologists alike, with each discipline bringing its individual perspective into its theoretical framework. The result has been a wide variety of definitions and conceptions and much criticism of one perspective by another. This might of course be expected, for, just as symbolic formation involves "personal contemplation" (Dewit, 1971, page 24), so too will individual theories about symbols.

Hall (1953) pointed out that there appear to be two main accounts of why symbolism occurs. One account defines symbols as disguises for unconscious wishes attempting to escape censorship by the super-ego (Freud, 1900, 1916). The other, perhaps more common, account describes symbols as a visual means of expressing abstract ideas (e.g., a lily is a symbol of purity). Supporters of both perspectives seem to agree that symbolic formation involves "the affective imaginative powers of man" (Dewit, 1971, page 30) or, in other words, view a symbol not as a direct representation of an object but rather as the "individual's personal conception of the object". However, disagreements arise particularly concerning the level of consciousness at which the abstraction operates, and as to whether symbols are "freely chosen" (Bertaltanty, 1965, page 47) or whether they are predetermined, as Freud (1916) suggested, by unconscious impulses. It seems reasonable as Rapaport (1965) has pointed out that "symbols fall into several dicho-
tomies or can be graded along several axes from "deliberately created representations of high order abstractions" to "the unconsciously emerging symbols of dreams and mental illness" (page 102).

In studying dream symbolism, Freud realized that he was involved with only a small part of "the extraordinarily wide province of symbolism" (1916, page 148). However, he believed that dream symbols were of tremendous importance to psychoanalysis because he conceived of them as the direct representations of unconscious wishes which acted to distort "unacceptable" impulses and thus to allow them to emerge into consciousness. Symbols were defined by Freud as those dream elements which had a constant relationship to the unconscious dream thought. He felt that by interpreting these symbols, he could bring unconscious material to light.

Freud believed that we can learn the significance of symbols through studying "myth and fairytale, jokes and witticisms, from folklore, sayings and songs and poetic and colloquial usage of language" (1916, page 158). Compared to other things that could be represented, symbolism in dreams emphasizes heavily sexual contents, according to Freud. Because he conceived of dreams as distorted representations of the unconscious and, because the unconscious was conceptualized as the domain of libidinal instincts, it did not surprise Freud to find that dream symbols so frequently had sexual referents.

Freud postulated that the genitals of both sexes were most often
symbolized in dreams. More specifically, he claimed that the male organ was represented by 1) any object which resembled it in form, 2) any object of penetrating or injurious nature such as a gun or knife, 3) objects capable of elongation, and 4) other less clearly classified objects such as reptiles and hats. The female genitals were symbolized by anything with "the property of enclosing a space" (1916, page 139) or anything that acted as a receptacle, such as rooms, boxes, containers, cupboards, etc. The female genitalia could also be represented by a landscape.

In the case of symbolism of the female, Freud spoke of representation of general body form as well as of representation of the genital organs. He stated, for instance, that the female breasts are symbolized by fruit.

Review of Previous Research

As Freud never clearly stated whether he believed that the content meaning of the symbol or the shape of the symbol was the most important feature, research studies have followed both of these aspects.

The first group of researchers are those who have studied the content meaning of the Freudian symbols and have generally included in their research possible cultural referents of the symbols. Their studies have arrived at conflicting results. Barker (1957), and Schonbar and Davitz (1959) both discovered that, where the cultural referent was available, sexual designation was in terms of cultural meaning
whether it agreed with or conflicted with the Freudian prediction, and, where culture was not a variable, sexual designations did not differ from chance. The authors thus concluded that the Freudian theory was invalid.

There appear to be two main problems with these papers: one in the method, the other in the theoretical construct. First of all, one may agree that the Freudian symbols used were proven not to be culture-free, but we point out that the authors' discovery of the significance of the cultural variable has in no way disproved Freud's theory. Freud, in fact, stated that "sexual symbolism can find its best hiding place behind what is common-place and inconspicuous" (1900, page 355). A symbol having a cultural referent is, when available, therefore an obvious choice, as it is a more socially acceptable and non-threatening means of symbolizing sexuality.

Lessler (1964) also attempted to investigate the significance of the content meaning of a symbol and to compare its Freudian and cultural referents. Contrary to the preceding studies, Lessler's symbols were sorted as predicted by Freudian theory significantly more often than chance. Although the methods used in Lessler's study and in the previously-cited studies differed, they both required a high degree of conscious choice by the subjects. The conflicting results are perhaps as a result of methodological problems--confusing, and illustrate the difficulties arising when a cultural variable is introduced.
Because of this difficulty in dealing with cultural definitions of symbols, and because Freud explicitly stressed the importance of the shape of the symbol in its resemblance to the sexual organs, most studies have used simple geometric shapes as the symbols in their research. In each such study, "elongated", "angular" and "pointed" shapes have represented the male organ, "rounded", "containing" and "enclosing" shapes, the female. Interestingly enough, these categories are not exactly in line with Freudian theory, especially as it applies to female symbolism. Freud's original lists of symbols, as cited earlier, included a number of angular, pointed objects as feminine, and implied, but did not explicitly state there would be, a rounded quality when referring to the female body form. No study thus far published has attempted to isolate and examine these various dimensions to determine which stimulus quality is most strongly identified as male and which as female. It would appear that the "containing" quality of the symbol would be more representative of the female reproductive organs and the "roundness" of general body contour. The same distinction may be true, but to a lesser extent, of the masculine dimensions of "projecting" and "angular". The present study will attempt to examine each dimension separately to discover the more powerful dimension in symbolic determination.

Studies investigating the sexual significance of geometric forms have discovered that adults identify "elongated" shapes as masculine
and "containing" shapes as feminine (Starer, 1955; Stennet and Thurlow, 1958; Jones, 1956; Winter and Prescott, 1957; Moos and Mussen, 1959). Studies done with children, however, have presented varied results. Levy (1956), using geometric shapes, found no evidence of sexual symbolism in young children. Lessler (1969), however, did conclude that, when there was no obvious cultural referent, half the children did sort at least the "elongated" shapes appropriately. Cameron (1967) also reported findings which supported the psychoanalytic theory of symbolism in young children, as did Erikson (1954) and Krout (1950). The last three studies mentioned used more projective techniques in an attempt to get past the defensive processes, which may account for their positive results. However, it is still uncertain why the so-called more "direct" methods have obtained results with adults and not with children.

Two studies have attempted to compare various age groups' performance in identifying Freudian sexual symbols. Both used the method of Levy (1954), and both concluded that only in late adolescence does the sexual significance of symbols become apparent. Acord (1962) placed the age at 17 and over, Solway (1971), at 19.5 years. Again, a more direct method was used in both these studies, which may have influenced the results. However, as the present study is attempting to investigate the various specific stimulus dimensions mentioned by Freud as determinants of sexual symbolism, in order to avoid the con-
fusion of the age variable, the author decided that all subjects would be adults, i.e., 18 years and over.

One discovery made by Lessler suggests that there may be a difference in the strength of the response to the two groups (elongated and containing) of sexual symbols. In his study with children (1968), as mentioned earlier, his "elongated" shapes were identified as masculine by at least half of the children, while the "containing" shapes were never identified as feminine. In his study with adults (1964), he arrived at a similar conclusion, stating that "the masculine referent of a symbol, whether Freudian or cultural, was more potent in determining the response to a symbol than the feminine referent". It is possible that this is due to the fact that the male organ is more visible than the female, or, as Lessler asserts, the finding may reflect the cultural bias in our society. It is hypothesized by the author that the sexual symbols used to represent "femininity" may have been misrepresented due to the confusion surrounding the Freudian theory of female symbolism. Again, for this reason, the following study hopes to clarify this point by separating the stimulus characteristic of "elongated", "angular" and "containing", "rounded".

Sex differences in symbol selection also appeared in several studies. Jones (1956), Starer (1955) and Winter and Prescott (1957) all found that males sorted symbols into both male and female categories more accurately than females. Lessler (1964) found male subjects
sorted symbols with female Freudian referents better than females and vice versa. (This finding gives support to Fenichel's hypothesis (1945) that individuals tend to prefer shapes representative of the sexual organs of the opposite sex.) It seems, in light of these studies, that a sex difference may occur in the assigning of gender to sexual symbols. For this reason, the present study will include an equal number of male and female subjects.

Perhaps the most significant consideration in the investigation of Freudian sexual symbols is the method used to study them. There appear to be several methods employed to date, none of which has proven to be entirely satisfactory.

The major problem has been to find a way of measuring symbol-formation that would get past the defensive mechanisms of the subject while, at the same time, still proving reliable.

Freud stated that in many instances, an individual is totally unaware of the meanings of the dream symbols (1916, page 135) until they are interpreted to him. If symbols are thus believed to reside deep within the unconscious, it would be futile to set up self-report methods to investigate them. However, if symbol-formation occurs at a more intermediate point along the conscious-unconscious axis or, as Dewit asserts (1971), at a level of "implicit awareness" (1, page 7), it does seem reasonable to study symbols by methods which would operate at that level.
As Schonbar and Davitz (1960) have pointed out, the methods used thus far to study symbols have represented various degrees of directness, and have required differing amounts of conscious decision-making by the subject. Levy (1954), Starer (1955) and Stennett and Thurlow (1958) all used the method of asking the subject to assign a male or female name to each of the figures. This is a fairly direct method, and, therefore, most open to influence of conscious control and defensive behaviour. Jones (1954) and Barker (1957) used a similar method; they asked the subjects either to identify objects as "male" or "female" or to make these objects male or female characters in a story-book. Lessler (1964, 1968) had Ss sort figures into two boxes labelled "girl, sister, mother" and "boy, father, brother". This last method seems particularly suspect because of the great divergence among the meanings of the male and female categories used (e.g., mother vs. sister). The same may be said for the method of assigning names, since the names were not equated for all their stimulus attributes, and therefore might have symbolized things other than masculinity and femininity.

Other studies have tried to use a less direct method. Levy (1954) and McBrayer (1959) both had Ss recall names paired with figures to see if elongated shapes paired with masculine names would be remembered better than those paired with female names. Both studies found that they were not. However, this method confronts the problem mentioned earlier, viz., that the names may have had a wide variety of
stimulus characteristics.

A number of projective techniques have also been used, chiefly with children. Krout (1950) had subjects complete straight and curved-line drawings, while Erikson studied the play configurations of young children. Both these studies found support for early sexual symbolism. No study thus far had adequately studied symbolism with a projective techniques with adults, although users of various psychological tests continue to interpret these results as though the hypothesis had been adequately tested (Machover, 1947).

Another method used have been the picture-preference test (Cameron, 1968). Cameron (1968) believed that the failure of other studies to substantiate the Freudian theory of genital symbolism was due to the "rational" methods used. His method, being "non-rational", did not alert the defensive ego structure. However, here again there appears to be problems. It would seem almost impossible to conclude that because a member of one sex has a preference for a particular object the object is symbolic of that sex.

A few studies to date have used the semantic-differential technique. This technique, devised by Osgood (1952), is a general method for measuring the connotative meaning of concepts by "the allocation of the concepts to an experimental continuum definable by a pair of polar items" (Osgood, 1952, page 227). In other words, the subject is presented with a pair of descriptive polar terms (rough-smooth) and a con-
cept (in this case, a geometric shape) and asked to indicate the direction of the association. Osgood, in an extensive factor analysis, discovered several dimensions which are "roughly" independent and which are regularly used in assigning meaning to concepts (in this case, words).

Glatter and Reece (1962) had subjects respond to 20 scales of the semantic differential in describing objects of different shapes and textures. Worthy and Graddick (1969) had subjects rate typical Freudian symbolic words, e.g., umbrella, for masculinity and femininity using the same technique. Schonbar and Davitz (1960) in an original design, investigated both the "connotative" and "denotative" designation of sexual symbols. The denotative designation was measured by asking the subject whether each symbol would best be male or female in a storybook; the connotative by asking them to describe the symbols themselves plus a male and a female figure on 12 scales of the semantic differential. The two approaches did not produce differing results and both failed to support the hypothesized Freudian sexual significance of the symbols. Nonetheless, the semantic differential represents an objective, reliable and valid method of measuring the meaning of a concept. The present study, therefore, employed a method derived from the semantic differential in hopes of obtaining a valid response that did not alert additional defense mechanisms and therefore would operate at the level of implicit awareness.

The investment in body organs or the perception of body image
as it has developed out of personal experience is believed to be a major
determinant in the formation of sexual symbols. Freud (1938) felt that
these symbols were limited primarily to those objects whose shape
resembled the genital organs. Others such as Machover (1949) feel
that general body contour may also be a major referent of sexual sym-
bolism because "the body or the self is the most intimate point of
reference in any activity" and because "we have, in the course of
growth, come to associate various sensations, perceptions and emo-
tions with it" (page 8).

Statement of Hypothesis

The present study is an attempt to investigate these two possi-
bilities -- that sex-assignment may be symbolized either by similarity
to the genitals or by similarity to the body as a whole -- by comparing
subjects' responses to those stimulus qualities of simple geometric
shapes which most represent the shape of the genitals with those which
most represent general body contour. It is hypothesized that the shape
of a symbol is a major determinant of subjects' assigning gender to it
and that sexual symbols derive meaning from their similarity in form
to both the genitals and to general body shape. Secondly, it is hypo-
thesized that of these two referents, body shape is the stronger deter-
minant in assigning gender because of its greater visibility and be-
cause it offers a less threatening means of assigning gender to sexual
symbols.
Method

Subjects

The sample was composed of one hundred subjects, half of whom were male and half female. All were at least 18 years of age and were volunteers from the university or the community. Mean ages and educational levels of the subjects are given in Table 1.

Materials

The materials consisted of 24 abstract shapes designed by the author to represent the following four groups:

Group A: the "angular" and "elongated" group. All figures are straight-lined with pointed angle, are one dimensional, and are at least two inches in length. This group is designed to represent both male genital shape and male body contour.

Group B: The "angular" and "containing" group. All six figures are straight-lined with pointed angles and are enclosed on all sides. In this group, all shapes are designed to represent the female genital shape and the male body contour.

Group C: The "rounded" and "elongated" group. All figures have curved lines, are composed of one-dimensional parts, are at least two inches long. They are designed to represent female body contour and male genital shape.

Group D: The "rounded" and "containing" group. All figures have curved lines and are enclosed; they represent female genital
### TABLE 1

AGE AND EDUCATIONAL LEVEL
OF SUBJECTS IN YEARS

<table>
<thead>
<tr>
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<th>AGE</th>
<th></th>
<th>EDUCATION</th>
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</tr>
</thead>
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<tr>
<td></td>
<td>Mean</td>
<td>Range</td>
<td>Mean</td>
<td>Range</td>
</tr>
<tr>
<td>Male</td>
<td>27.2</td>
<td>18-50</td>
<td>16.4</td>
<td>13-20</td>
</tr>
<tr>
<td>n=50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25.2</td>
<td>18-50</td>
<td>15.0</td>
<td>11-19</td>
</tr>
<tr>
<td>n=50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26.5</td>
<td>18-50</td>
<td>15.7</td>
<td>11-20</td>
</tr>
<tr>
<td>n=100</td>
<td></td>
<td></td>
<td></td>
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</table>
shape and body contour.

All figures were presented on 4" by 4" white cards. Illustrations of the test figures are given in Figure 1, A - D.

Procedure

The subjects were tested individually, each subject seeing all 24 cards, one at a time, for 30 sec. each.

Each subject also received a booklet of 24 pages (one per card), containing eight bi-polar graphic rating scales. Three of these were the three major continua of the semantic differential, representing the evaluative (good-bad), potency (weak-strong) and activity (fast-slow) factors. Four others were added which did not have an obvious stereotyped male-female meaning. The eighth was the male-female dimension itself. Only the last scale was analyzed, the others providing a context for the judgement. It is believed that by including the critical dimension in a complex set of judgements about the meaning of the figures, an more unguarded response would be obtained. Figure 2 provides an example of the sheet in the test booklet.

The positioning of the male and female scale was systematically varied and counter-balanced among subjects in order to control for the possible development of a "left-right" position habit.

The subjects received the following instructions:

On each page of the booklet before you, you will find eight pairs of adjectives connected by a straight line. I will be showing you 24 figures one at a time. Look at each shape
Figure 1A. -- Group A (Angular-Elongated)

A1 $\bar{x} = 5.77^\circ$

A2 $\bar{x} = 7.42^\circ$

A3 $\bar{x} = 6.14$

A4 $\bar{x} = 6.63$

A5 $\bar{x} = 6.63$

A6 $\bar{x} = 6.48^\circ$

GROUP MEAN = 6.34
Figure 1B. -- Group B (Angular-Containing)

B1 - $\bar{x} = 5.63^\circ$

B2 - $\bar{x} = 5.64^\circ$

B3 - $\bar{x} = 6.39^\circ$

B4 - $\bar{x} = 6.27^\circ$

B5 - $\bar{x} = 6.08^\circ$

B6 - $\bar{x} = 6.34^\circ$

GROUP MEAN - 6.06
Figure 1C. -- Group C (Rounded-Elongated)

C1 - \( \bar{x} = 4.64^{**} \)

C2 - \( \bar{x} = 2.11^{**} \)

C3 - \( \bar{x} = 3.43 \)

C4 - \( \bar{x} = 3.47 \)

C5 - \( \bar{x} = 3.71 \)

C6 - \( \bar{x} = 4.75^{**} \)

GROUP MEAN - 3.67
Figure 1D. -- Group D (Rounded-Containing)

D1 - $\bar{x}$ - 2.48
D2 - $\bar{x}$ - 2.35
D3 - $\bar{x}$ - 3.48
D4 - $\bar{x}$ - 3.00
D5 - $\bar{x}$ - 2.69
D6 - $\bar{x}$ - 3.47

GROUP MEAN - 2.91
Figure 2.

FEMALE _______________ MALE
BAD _______________ GOOD
SLOW _______________ FAST
SOFT _______________ HARD
HAPPY _______________ SAD
DULL _______________ BRIGHT
STRONG _______________ WEAK
COLD _______________ WARM
and, from your first impression of it, determine what point on each line best describes the qualities of the figure. You will have 30 seconds to do each page. You may put your 'X' at any point on the line. Let your imagination go and put down the first thing that comes to mind.

The line joining the bi-polar word pairs was ten centimeters long. For the purpose of scoring, the "male" end of the line was given a value of ten cm. and the "female" end, 0 cm.

Statistical Design

An analysis of variance was conducted to compare the various stimulus characteristics of the four groups of figures used, after eliminating the possible effects of the left-right position of the test dimension, the sex of the subjects, and individual differences in overall rating habits.

A t test was also done on the 24 test patterns to determine which figures were not truly representative of the group to which they were assigned.

Results

The results of the analysis of variance are presented in Table 2 and the individual cell means are recorded in Table 3.

These results clearly indicate that there is a significant difference between the ratings of figures with an angular quality and the ratings of those with a rounded quality, and that this difference is in the predicted direction. In other words, the "angular" shapes are per-
### TABLE 2

#### ANALYSIS OF VARIANCE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
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<tbody>
<tr>
<td>Sex (A)</td>
<td>1</td>
<td>.15</td>
<td>.02</td>
</tr>
<tr>
<td>angular-rounded (B)</td>
<td>1</td>
<td>5078.91</td>
<td>224.39***</td>
</tr>
<tr>
<td>elongated-containing (C)</td>
<td>1</td>
<td>165.18</td>
<td>17.09***</td>
</tr>
<tr>
<td>A x B</td>
<td>1</td>
<td>21.33</td>
<td>.94</td>
</tr>
<tr>
<td>A x C</td>
<td>1</td>
<td>1.06</td>
<td>.11</td>
</tr>
<tr>
<td>B x C</td>
<td>1</td>
<td>35.09</td>
<td>3.84</td>
</tr>
<tr>
<td>A x B x C</td>
<td>1</td>
<td>31.12</td>
<td>3.41</td>
</tr>
<tr>
<td>Subjects within groups</td>
<td>98</td>
<td>8.63</td>
<td>1.39***</td>
</tr>
<tr>
<td>Patterns within groups (D)</td>
<td>20</td>
<td>42.14</td>
<td>6.80***</td>
</tr>
<tr>
<td>A x D</td>
<td>20</td>
<td>5.23</td>
<td>.84</td>
</tr>
<tr>
<td>B x patterns within groups</td>
<td>1</td>
<td></td>
<td>120.49***</td>
</tr>
<tr>
<td>C x patterns within groups</td>
<td>1</td>
<td></td>
<td>3.92**</td>
</tr>
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</table>

*** - p < .01

** - p < .05
### TABLE 3A

**MEAN SCORES OF FIGURES VARYING ALONG GENITAL SHAPE AND BODY SHAPE DIMENSIONS**  

<table>
<thead>
<tr>
<th></th>
<th>Rounded</th>
<th>Angular</th>
<th>Rounded and Angular</th>
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<tbody>
<tr>
<td>Containing</td>
<td>2.90</td>
<td>6.05</td>
<td>4.47</td>
</tr>
<tr>
<td>Elongated</td>
<td>3.82</td>
<td>6.34</td>
<td>5.08</td>
</tr>
<tr>
<td>Containing and Elongated</td>
<td>3.36</td>
<td>6.18</td>
<td><strong>Grand Mean</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.77</td>
</tr>
</tbody>
</table>

### TABLE 3B

**MEAN SCORES OF MALES AND OF FEMALES**

<table>
<thead>
<tr>
<th></th>
<th>Angular</th>
<th>Rounded</th>
<th>Containing</th>
<th>Elongated</th>
<th>All Figures</th>
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<tr>
<td><strong>Males (n=50)</strong></td>
<td>6.30</td>
<td>3.21</td>
<td>4.45</td>
<td>5.03</td>
<td>4.76</td>
</tr>
<tr>
<td><strong>Females (n=50)</strong></td>
<td>6.11</td>
<td>3.36</td>
<td>4.58</td>
<td>4.95</td>
<td>4.74</td>
</tr>
</tbody>
</table>
ceived by the subjects as "male" and the "rounded" shapes as "female". Similarly, the "containing" and "elongated" qualities of the figures also proved to have a significant effect, with the "containing" shapes being perceived as "female" and the "elongated" as "male".

An inspection of the cell means of the groups of figures, furthermore, shows that the effects of these two qualities are additive. Again, these differences are in the predicted direction, with group A (elongated-angular) receiving the highest score (closer to the "male" end of the continuum) and group D (rounded-containing) the lowest score (closer to the "female" end of the continuum). Of note as well is the difference in the scores of the two intermediate groups B and C. These groups are comprised of figures with "mixed" stimulus qualities, each figure having one male and one female quality. It is apparent from an examination of Table 3 that the "angular-containing" group was assigned a higher "male" score than the "rounded-elongated" group. A test conducted on these mean scores was significant at the .01 level, indicating that the "angular-rounded" dimension of a test shape is a more powerful determinant in the assigning of gender to the shape than the "containing-elongated" dimension. This finding validates the hypothesis that the qualities of a symbol representing the general body contour of males as compared to females is a stronger referent in assigning gender than those dimensions presumed to represent the shape of the genital organs.
An examination of the cell means of the four groups also shows that the mean scores of both mixed stimulus groups B and C fall within the mean scores of groups A and D, and therefore closer to the middle point of the continuum. It may be speculated that the "mixed" groups, i.e., those groups in which the stimulus qualities representing female body contour is paired with the stimulus quality representing "male" genital shape and vice versa, present the Ss with a conflict which they appear to resolve by assigning a more neutral value to the figures in groups B and C.

Another variable investigated in this study was the sex of the subjects. The analysis of variance illustrates that the male and female subjects did not differ significantly in assigning gender to the test shapes nor did the sex variable influence any of the main effects. This result contradicts the work of Jones (1956), Starer (1955), and Winter and Prescott (1957) who discovered that male Ss sorted symbols into both male and female categories more accurately than the female Ss and may lend credence to the hypothesis that previous studies have used invalid shapes to represent Freudian feminine sexual symbolism.

The present study, however, did not use a sorting technique. Therefore, any comparison is difficult and any theory concerning the difference between this and previous studies is speculative. Nonetheless, this study found no significant differences in males' and females' responses to the test figures.
The present study also fails to confirm Lessler's conclusion that "the masculine referent of a symbol, whether Freudian or cultural, was more potent in determining the response to a symbol than the feminine referent". Again, differences in test material and method used to assign gender makes comparison difficult.

Another discovery made by Lessler was that male Ss sorted symbols with female Freudian referents better than females and vice versa. This finding is testament to lend support to Fenichel's theory (1945) in which he postulated that individuals tended to prefer shapes representative of the sexual organs of the opposite sex. In the present study, although the sex variable was not significant in and of itself or in its effects on any of the other variables, a noteworthy trend does appear in the cell means (recorded in Table 3). Male Ss seem to assign a slightly higher "male" value to the angular-elongated shapes (those shapes in which both those qualities representative of "male" body contour and genital shape are present) than the females. Similarly female Ss assign a higher "female" value to the containing-rounded shapes. This finding appears to indicate that both male and female Ss identify most strongly with those symbols representative of their own sex, contrary to Lessler's conclusion.

Sex differences in response to the "mixed" test figures, although again insignificant, suggest yet another trend. Female Ss assign a higher "male" score to the "angular-containing" group than the males.
and the male Ss assign a higher "female" score to the rounded-elongated group. It appears that both sexes when confronted with conflicting sexual stimuli, in which one male and one female quality is present, are able to respond more strongly to those stimulus qualities representing the body contour of the opposite sex. As postulated previously, the "mixed" group presents the Ss with a conflict and this conflict appears to be greater for both sexes when the stimulus quality representing their own sexes' body contour is paired with the stimulus quality representing the genital shape of the opposite sex. In order to reduce the conflict, both male and female Ss tend to assign a more neutral value to the disturbing stimulus. It must be remembered that this trend is small and would require further investigation.

As indicated in Table 2, individual subject's variance is significant at the .01 level. Individual differences might well be expected in a study of symbolism due to the "personal contemplation" (Dewit, 1971) involved in symbolic formation.

The last significant finding in the analysis of variance concerns individual pattern differences. Although these differences are not greater than the main effects, they warrant examination in order to identify those test figures which are not representative of the group to which they were assigned.

Figures 1A-D illustrates the twenty-four figures along with their mean scores. t-tests were performed on each score and those
shapes which proved significantly different at the .01** and .05* level are marked.

In Group A (angular-elongated) there are two shapes significantly different at the .01 level and one shape significantly different at the .05 level with shapes A1 and A6 being perceived as more neutral relative to the others in the group and A2 as more masculine. It may be speculated that A6 was assigned a less masculine value because it consisted of more lines than the others and therefore more closely approximated what Freud called the "complicated topography of the female body" (1945). Freud also claimed that the female body was frequently symbolized by a house with "balconies and ledges to hold on to" (1945, page 145). For this reason, too, shape A6 may have appeared less masculine than the others in its group. Figure A2, on the other hand, may have been assigned a high masculine value because it is so "uncomplicated". Of all the shapes in group A, A2 most closely approximates a straight line and therefore the shape of the male genitals.

In the angular-containing group (B), there are two shapes which are significantly different at the .05 level, both being assigned a lower masculine value. Again both these shapes may have appeared more "complicated" than the others because they both have more sides and angles. In fact, in this group, there is a correlation between the number of sides of the shapes and the score assigned: the fewer the number of sides, the higher the "male" score.
In group C (rounded-elongated), this trend continues. Figures C1 and C6, the simplest designs, are assigned a lower "female" value than the rest.

In the fourth group (rounded-containing), there are three shapes which are significantly different at the .05 level. There appears to be no consistent trend in this group and it may be that each of these shapes resembled some other object (i.e., D3 was frequently seem as a kidney) which then determined the gender assigned.

Aside from this final group, all other groups of figures show a possible trend in that those shapes which do not "fit" may do so because their construction is simpler (in the case of designed female shapes) or more complex (in the case of designed male shapes). In conclusion, it appears that, in addition to the angular-rounded, containing-elongated qualities, the complexity-simplicity dimension may also be an important determinant in assigning a "male" or "female" value to a symbol.

Discussion

The first question posed in the present study was whether or not the assigning of gender to a symbol was done on the basis of its shape, according to the Freudian theory. Freud believed that the male and female genitals were symbolized primarily by objects which resembled them in form" (1953, page 139). The present study, using simple shapes constructed in a way prescribed by Freud's theory,
attempted to verify his hypothesis by asking subjects to assign a male or female gender to each figure. The figures were designed to have no obvious content meaning, particularly no culturally-determined sexual content meaning. The results substantiate previous studies (Acord, 1962; Lessler, 1964; Starer, 1955; Winter and Prescott, 1957) in which abstract shapes were sorted in agreement with Freudian referents. This lends strong support to his theory of sexual symbolism which appears to stand despite the different methods used in the various studies.

However, the conclusion drawn from this and other studies, that form is a major determinant in the formation of sexual symbols regardless of their content meaning is subject to two criticisms, both of which are raised by Lessler (1964). First of all, in this study, and in others using abstract shapes, the test figures were not proven to be free of any content meaning and therefore may have resembled an actual object rather than symbolized the shape of the genitals. Further, the resembled object may have had a culturally-determined sexual significance which governed the assigning of a gender to it, not a Freudian sexual significance. However, in the present study, only two of the figures were described as "looking like" an object and neither of these objects had any obvious sexual content meaning. This observation, however, was not systematically tested in that not all the subjects were asked for their associations to the shapes and
therefore these conclusions are based on a few volunteered responses. The second objection raised by Lessler of studies which attempted to eliminate the cultural variable by using shapes rather than objects concerns the homogeneity of the sample used. Because of the common cultural background of the subjects, subtle cultural cues may have been inherent in the shapes, with the result that gender assignment was based on these rather than the subjects' recognition of the anatomical meaning of the symbols. A study in which the samples were drawn from various cultural groups would eliminate this problem and provide information concerning the universality of Freudian sexual symbolism.

Despite these criticisms, however, the present study does appear to provide evidence consistent with the importance of form alone in the formation of sexual symbols as Freud observed it.

The second area investigated in this study concerned the specific dimensions of the sexual symbols. Freud's theory of symbolism was based on his belief that most symbols, particularly those found in dreams, were sexual in nature and were distorted representations of the genitals. He also alluded to the possibility that some symbols were representative of the general body contour of males as opposed to females. However, the latter hypothesis was not the central focus of his theory.

Previous research into this area has utilized "angular", 
"pointed" and "elongated" shapes to represent "male" symbols and "rounded", "containing" and "enclosing" shapes to represent female symbols, assuming that all of these qualities were representative of Freud's conceptions. None of the studies thus far published have described or printed the test symbols, so it is difficult to speculate exactly what shapes were used or what meaning previous researchers gave to the various concepts. In addition, none of the studies sorted out the various stimulus qualities but rather assumed that all were descriptive of Freud's theory. Freud, however, seemed to stress the importance of the "projecting" "elongated" quality of male symbols and the "containing" "enclosing" quality of the female symbols. The "rounded" and "angular" qualities seem less significant to his theory and were not even specifically mentioned.

It appears then that previous studies can be challenged on at least two points. First of all, strictly speaking, they did not accurately interpret Freud's theory as it concerned sexual symbolism, and, secondly, previous researchers may have designed test figures which were not valid representations of the theory because they included a "rounded-angular" dimension which Freud never specified.

The present study was an attempt to clarify this issue by examining the two stimulus dimensions independently and in combinations. It was postulated that the "containing"-"projecting" dimension was representative of the Freudian concept of sexual (i.e., genital anatomy) symbolism and that the "angular-rounded" dimension was
representative of theories which stressed the importance of body shape and contour as a referent in sexual symbolism (Machover, 1947). The second hypothesis tested in this study was that both the angular and elongated qualities were major dimensions in assigning a male value to a shape and that the containing rounded qualities were major dimensions in assigning a female value to a shape because both body contour and genital shape were major referents of sexual symbolism. In addition, it was also postulated that those qualities representing body contour would play a more important role in the assigning of gender to a shape.

As stated in the results, both of these hypotheses were substantiated. In other words, both the elongated and angular shapes were assigned a male value and were significantly different from the containing, rounded shapes which were assigned a female value. More important, when the dimension representing male body contour was paired with the dimension representing female genital shape or female body contour with male genital shape, and vice versa, the assigning of gender was based on the body shape referent rather than the genital shape referent.

These findings can be explained in several ways. The fact that body contour is a major referent in sexual symbolism may simply reflect the greater visibility of the body. As Machover (1947) has pointed out, the body is a major point of reference in any interpersonal encounter and is therefore likely to play a central role in any conceptualization of sexual differences and, therefore, in sexual symbolism.
This explanation is based on simple learning principles stating that individuals learn to associate body form and sexuality, from which it follows that body shape will play a major role in symbolizing sexuality.

These findings may also be explained from a more dynamic position, as it may be postulated that these results lend support to an impulse-defense paradigm (a psychoanalytic model) for predicting response to symbols. It may be that if a symbol has two referents, the referent depicting the shape of the genitals would represent an unconscious impulse more directly than the referent of general body contour, and therefore would be defended against. Like the cultural referent in the previous research, the body contour referent represents a less threatening way of symbolizing sexuality. This appears to be the case since the angular-rounded quality, representing body shape, proved to be the stronger determinant in assigning gender than the elongated-containing quality, suggesting that the latter may have touched an unconscious impulse, aroused anxiety, and brought defense mechanisms into play.

This impulse-defense paradigm is further supported by the results of the Ss' responses to the two "mixed" group of figures: those groups in which the reference of one sex's body contour was paired with the referent of the opposite sex's genital shape. In both these groups, the Ss' responses were weaker and more neutral (closer to
the middle of the line). It may be speculated again that the conflict presented by these two groups increased the Ss' awareness of their unconscious impulses, making them more defensive and less willing to assign a strong male or female value to the symbols.

The present study failed to find any significant differences in male and female subjects' responses to the symbols. There was no evidence to support the conclusion of Jones (1956) and other researchers who observed that males identified more sexual symbols correctly than females. Lessler (1960), who also failed to find differences in male and female subjects' responses offers two possible reasons for the discrepancy. First of all, he asserts that contradictory findings in other studies may have resulted from "an emphasis upon the sexual significance of the symbols which seemed to be contained in the instruction" (page 47). In other words, the task of sorting the symbols into male and female categories was presented in such a way as to alert the subjects as to the sexual nature of the test. Included in Lessler's speculation is the assumption that female subjects are more alarmed by the sexual aspects of the task and that this alarm interferes with their performance. Be this the case, it would appear that Lessler's hypothesis may explain why no sex differences were observed in the present study. By utilizing the semantic differential method, this study did not present the task in a way which alerted
subjects to the specific sexual significance of the shapes. Rather, it required the Ss to make eight different judgements about the symbols and not simply the one required by a sorting task. Further investigation comparing the different methods used thus far would necessarily have to be conducted before any reliable conclusions could be drawn.

Lessler's second hypothesis concerning the differences between those studies finding differences in male and female Ss response and those that did not, involves the sex of the experimenter. Jones and others had male experimenters administering the test, who, according to Lessler, may have had an inhibitory effect on female Ss responses. This may also help to explain why no differences were discovered in the present study since all Ss were tested by a female E. Again, however, this would have to be systematically tested out in a study which compared male and female Ss responses in the presence of both a male and female experimenter.

Another factor operating to reduce sexual differences in subject's responses may involve the sample used in the present study. The young and highly educated subjects may have been representative of a culture in which the inhibitory factors operating in previous studies are less prominent and therefore do not affect the female Ss in the present sample. Again, acceptance of such an explanation would require further investigation.

Another finding reported by several researchers (Schonbar
and Davitz, 1960; Baker, 1957; Lessler, 1968) concern subjects' response to the designed "male" and "female" symbols. All of these studies found that there was a more accurate sorting of the "male" than of the "female" shapes by all Ss or, as Lessler (1968) puts it, the masculine referent appeared the more potent in determining the response to the symbol. A number of reasons are provided by the various researchers to explain this discovery. First of all, it may be that the samples used were drawn from a population in which males and females were competing in a masculine way and that the sub-culture sampled was predominately male-oriented. Secondly, it has been postulated that this finding results from the greater stereotype for men than women in our society, making the designed male shapes in the study more representative of the stereotyped male image. Other researchers maintain it is simply the greater visibility of the male genitals that makes any symbolic representation of it more "potent".

The present study found no significant differences in Ss response to the male and female symbols -- a finding which may also be explained from a similar cultural viewpoint. In other words, the differences in response patterns may be due to social changes in sex role stereotyping occurring in the past few years. The typical male image may no longer be as obvious as it was four years ago and it may no longer be as necessary for university women to compete in a "masculine" way to advance themselves.
However, there may be other, more dynamic reasons why no such difference was discovered in the present study. As mentioned earlier, there seems to be less clarity in the Freudian theory of what constituted a female sexual symbol. Freud gave many examples of female symbols, but did not provide the same theoretical description of them that he did for male sexual symbols. It may be then that previous studies have not used accurate representations of female symbols and, therefore, the designed male symbols appeared more potent simply because they were more representative of Freud's conception of sexual symbols.

Another factor involved again concerns the construction of the test shapes. Previous studies have used test figures designed by a male, who may unconsciously have designed his male shapes to be more representative and hence more potent. The test figures used in the present study were designed by a female which may account for the lack of differences in subjects' responses to "male" and "female" shapes. Whether or not the sex of the designer influences the shapes by making them more accurate or more biased is difficult to assess. However, a study comparing the different sets of test figures would provide information as to whether or not the sex of the designer is an influencing variable.

One final discovery of previous research studies concerning sex differences involves the interaction of the sex of the subject and the
sexual designation of the test figure. Lessler (1968) discovered that female subjects sorted symbols with Freudian masculine referents more accurately and male Ss sorted symbols with Freudian feminine responses more accurately. From this finding he drew support for Fenichel's theory that males and females prefer shapes representative of the sex organs of the opposite sex.

Any comparison between the present study and that of Lessler's is complicated by two major differences. First of all, the methods used to assign gender differ in the two studies, and, secondly, Lessler included a cultural variable in his design. However, because the present study revealed a trend in the opposite direction, Lessler's paper is cited for comparative purposes.

Despite the fact that there were no significant differences in ratings by subjects of different sex, interesting and contradictory trends do emerge. As was noted in the results, females assigned a higher female value to those symbols representing female body contour and genital shape, while male Ss assigned a higher male value to symbols representing male genital shape and body contour. Although the method used did not involve sorting as did Lessler's, nor was it a preference task and therefore the results are not pertinent in any direct way to Fenichel's theory, this finding does imply that male and female subjects tend to identify more strongly with symbols clearly representative of their own sex.
When the symbolic referents are "mixed", however, the opposite trend emerges. In other words, males assign a higher "female" value to those shapes representing female body contour and male genital shape; while females assign a higher "male" value to shapes symbolizing "male" body contour and "female" genital shape. This finding may be explained from two perspectives. First of all, it may be postulated that each sex confronted with the symbol of its own body contour and the opposite sex's genital shape experiences an unconscious conflict, becomes anxious, and guards against this anxiety by assigning a more neutral value to the symbol. Conversely, each sex, when presented with a symbol of the other sex's body contour and their own genital shape, is able to respond to what is most visible to them in the opposite sex and therefore is less affected by the unconscious conflict. These speculations might be investigated by comparing male and female subjects' response times to the different groups of symbols.

Any attempts to explain why some shapes were less representative of the groups for which they were designed are speculative, based, first of all, on the volunteered associations given by some of the subjects and, secondly, on Freud's original statements concerning sexual symbolism.

The present study attempted to reduce contamination by using geometric shapes having no inherent content meaning. However, this resulted in two problems. First of all, the cultural bias may inadver-
tantly have been overlook in that some of the shapes may have resembled certain cultural stereotyped sexual objects and that this resemblance may have determined the gender assigned. Secondly, by overlooking the content meaning, the study may have ignored some of the more powerful referents of sexual symbols as described by Freud. As mentioned earlier, Freud listed several broad categories into which sexual symbols fell. First of all, a male sexual symbol could be anything which resembled the shape of the genitals. (It is this category of symbols investigated in the present study.) Secondly, a male symbol could be any object of a penetrating or injurious nature and thirdly, any object capable of elongation. In addition to these categories, Freud listed a number of other objects which fell into no specific category (approximately 22).

The main category of female sexual symbols included any object enclosing a space or acting as a receptacle. Beyond this one grouping, Freud described no other clear-cut categories. Rather, he provided numerous individual examples.

The point is that most of Freud's support for his theory was in the form of specific examples, not clear-cut categories. Most studies investigating his theory, however, in an effort to reduce contamination by content meaning and cultural bias, have focused mainly on his statements about the importance of shape. By reducing sexual symbols by identifying one "angular"-"elongated" shapes as male and "co-
taining"-"rounded" shapes as female, the present study may have as-
signed certain shapes to groups to which they did belong on the basis
of their shape but to which they did not belong on their possible resem-
blance to an object described by Freud as being sexually significant.

For example, those forms in group D which were assigned a less
feminine value may have looked like "balloons", "fish" or "reptiles" --
symbols which to Freud were "masculine" despite their rounded quali-
ties. Likewise, shapes in group B, assigned a less masculine value,
may have looked like a "window", a "book", or a "stove" -- all "fe-
male" according to the Freudian theory despite their angular qualities.

As mentioned previously, at least some of the patterns may
have differed significantly from the group to which they were assigned
because of their "complexity" (in the case of those assigned to the "male"
groups) or "simplicity" (in the case of assigned "female" shapes).

Freud did allude to the possibility of this additional dimension when
describing the "complicated topography of the female body". It does
appear upon examination of the test figures in the present study that
those that did not "fit" their groups may have differed along this new
dimension. It is suggested that future studies include and control the
complex-simple qualities of the shapes.

The method of measurement used in the present study did appear
fairly successful and seems to have avoided some of the pitfalls of
previous methods. First of all, it allowed for a direct male-female
assignment and thus avoided the ambiguity of a preference test and the confusion of a sorting task in which the categories (e.g., mother-father) may have had a multitude of meanings to the subject. Secondly, it seemed to be a more sensitive instrument in that it allowed the subject a continuum along which to assign a value rather than the forced choice involved in a sorting technique. Thirdly, as the subject was required to make a number of judgements in a short period of time, he or she was not alerted to the specific sexual nature of the study. However, there appeared to be a problem concerning this last point. Three of the word-pairs used were taken directly from Osgood's Semantic Differential Technique and at least two of these pairs (hard-soft, warm-cold) did seem to alert the subjects to the sexual implications of the study. It is suggested therefore that any additional research take particular care to insure that all other word-pairs used apart from "male-female" have no stereotyped sexual significance.

The major drawback of the technique used in the present study concerns its validity. Can any technique, with the exception perhaps of a projective test, hope to tap into and measure unconscious impulses? This, of course, is a question that can be directed towards any of the research methods used to date to investigate Freudian dream symbolism, and it is a question that is extremely difficult to answer. Therefore, any results obtained from this and previous studies must be interpreted cautiously and these interpretations must take into account
the effects of a method which cannot help but alert some defensive mechanisms.

It is believed, however, that the method used, based on the semantic differential technique, does overcome some of the problems inherent in the sorting and preference tasks used to date to investigate Freudian sexual symbolism.

It would appear that the results of the present study do lend support to the Freudian theory that "shape" plays a major role in sexual symbolic formation. In addition, both stimulus dimensions representing general body contour and genital shape appear to play a significant role in assigning gender to these shapes and, of the two, the body-contour dimension appears the more powerful. This last observation might be looked at from both theoretical models of symbolic formation mentioned in the introduction. The first theory of symbolic formation conceptualized symbols as visual representation of abstract ideas. Sexuality can be classified as an abstract idea which might well be symbolized by shapes representing the "more visual" body forms of males as compared to females. Hence the angular-rounded qualities of the symbol would prove to be the stronger determinant in assigning gender to shapes.

From the psychoanalytic model, it may be argued that the angular-rounded quality simply represented a further distortion of
unconscious libidinal impulses from genital shape to general body contour and provided the subjects with a less threatening, more socially acceptable means of symbolizing sexuality. This hypothesis is supported by the fact that the subjects were in an experimental situation which undoubtedly alerted their defense mechanisms. Freud's theories were based mainly on the empirical evidence gathered from the free associations of his patients to their dreams. From this vantage point, he was likely able to obtain associations more closely related to unconscious impulses that the present study, which involved a specific task and a controlled setting. However, the fact that the elongated-containing quality, the essence of Freudian theory, was indeed significantly different and in the predicted direction despite these limitations, lends strong support to his theory of sexual symbolism.

Conclusion

The Freudian hypotheses that the shape of a symbol is a major determinant in assigning gender to it and that sexual symbols derive meaning from their similarity in form to both the genitals and general body contour were tested using a bi-polar rating scale. It was discovered that both the "angular"-"rounded" qualities of a symbol representing general body contour and the "containing"-"elongated" qualities representing the genital shape of males as compared to females were significant stimulus dimensions in assigning of gender -- a
finding verifying the Freudian hypothesis. Secondly, it was discovered that those qualities of a symbol representing the general body contour were a stronger referent in assigning gender than these dimensions presumed to represent the shape of the genitals. It was speculated that this second finding was due either a) to the greater visibility of the body in human interaction or b) to the fact that those stimulus dimensions representing body contour presented the subject with a less threatening means of symbolizing sexuality.
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