THE RELATIONSHIP OF ACTUAL STATURE TO
HEIGHT OF HUMAN FIGURE DRAWINGS

APPROVED:

Earl W. Hooper
Major Professor

Harold P. Holloway
Minor Professor

Douglas Kengery
Dean of the School of Education

Robert B. Toombs
Dean of the Graduate School
THE RELATIONSHIP OF ACTUAL STATURE TO
HEIGHT OF HUMAN FIGURE DRAWINGS

THESIS

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

DONALD E. BURNETT, B. S.
Denton, Texas
January, 1969
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>iv</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Review of Literature</td>
<td></td>
</tr>
<tr>
<td>Problem</td>
<td></td>
</tr>
<tr>
<td>Hypotheses</td>
<td></td>
</tr>
<tr>
<td>II. METHOD</td>
<td>14</td>
</tr>
<tr>
<td>Subjects</td>
<td></td>
</tr>
<tr>
<td>Description of Tasks and Apparatus</td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td></td>
</tr>
<tr>
<td>III. RESULTS AND DISCUSSION</td>
<td>19</td>
</tr>
<tr>
<td>Results</td>
<td></td>
</tr>
<tr>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>IV. SUMMARY, CONCLUSIONS, RECOMMENDATIONS</td>
<td>27</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>30</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Pearson Coefficients of Correlation, and Tests of Significance for Actual</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Stature and Height of the Two Human Figure Drawings</td>
<td></td>
</tr>
<tr>
<td>II.</td>
<td>Means, Standard Deviations, and Test of Significance for Actual Stature in</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Both Groups</td>
<td></td>
</tr>
<tr>
<td>III.</td>
<td>Means, Standard Deviations, and Tests of Significance for Height of the Two</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Human Figure Drawings in Both Groups</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Review of Literature

For a number of years there has been an interest in body image among various neurologists, psychiatrists, and psychologists. Body image or body concept refers to the individual's feelings and attitudes toward his own body. It is the way in which an individual's body appears to him. Body image is composed of both conscious and unconscious elements.

Within the Freudian conceptual framework body image is considered to be basic to the development of the total ego structure. Body image becomes a substantial nucleus of later ego elaborations. Freud (5, p. 16) states: "The ego is first and foremost a bodily ego; it is not merely a surface entity, but is itself the projection of a surface." A note appended to this statement and described as authorized by Freud explains further: "The ego is ultimately derived from bodily sensations, chiefly from those springing from the surface of the body. It may thus be regarded as a mental projection of the surface of the body. . . ."

There is some overlap in the terms self-concept and body image if self-concept is defined as a wide range of fantasies and complicated attitudes an individual has about his life.
role, his identity, and his appearance. Fisher and Cleveland (4) consider body image to be a summary in body terms of a great many experiences the individual has had in the course of defining his identity in the world.

Development, Significance, and Distortions of Body Image

Body image evolves through personal experience. Schilder (11, p. 296) describes the primitive body image as "... an undifferentiated filled bag which differentiates itself by continual contact with the outside world." It is developed through the experience of movement and sensations, the more important sensations in this respect being visual and tactile-kinesthetic. Contributing to the development of body image is the perception of the unity of the body. Social interaction also plays an important role. The individual who is the recipient of statements about his body which are based on another person's perception of his body may incorporate these perceptions into his own body concept.

Allport (1, p. 113) states that "Probably the first aspect of selfhood to evolve is the sense of a bodily me. The infant receives a constant stream of organic sensations from the internal organs of the body, from muscles, joints, tendons." Allport feels that the sense of bodily self gradually evolves during the first three years of life. Schilder (11) feels that the development of body concept probably runs to a great extent parallel with the sensory
motor development. Staffieri (15) found that by the age of eight years boys report self-perceptions of their own body type quite accurately.

Allport states:

Of course, sheer bodily sensation in the child would not give rise to a sense of self—it does not do so in the newborn—unless it is recognized as recurrent. Probably there is no recognition of recurrence until there is an appropriate maturation in the cortex that will retain "traces" of experience. It seems likely that the young infant has the nervous equipment to retain simple response habits before it is ready to retain "memories" such as are required for a sense of self-continuity.

The sense of the bodily me grows not only from recurrent organic sensation but from frustrations arising "out there." A child who cannot eat when he wants to, who bumps his head, soon learns the limitations of his too, too solid flesh.

Throughout life the sense of the bodily me is the basic attest of our existence. Our sensations and our movements feed us with constant awareness that I am I (1, pp. 113-114).

Body image provides the individual with a basic perceptual frame of reference. Furthermore, it appears that a well organized body image is a foundation necessary for the performance of certain judgements and skills.

Teitelbaum (17) hypnotically induced body image distortion. He found that the post-hypnotic suggestion to forget everything about the body resulted mainly in errors of differentiation of right and left sides of the body, difficulty in arithmetic calculation, difficulty in ability to draw geometric figures, and faulty recognition of objects.

Hershenson (6) was interested in finding if there was a relationship between arithmetic ability and clarity of
hand image as reflected in human figure drawings. He found that those who score highest on the arithmetic subtest of the verbal Wechsler Adult Intelligence Scale tend to draw hands with five fingers. This relationship was significant at the .05 level.

The importance of body image in the culture may be observed in terms of the widespread expenditure of time and effort that is given to altering the body's appearance. Individuals are constantly seeking by means of clothing, cosmetics, tattooing, and even plastic surgery to change their appearance and to make themselves look more like some ideal image they have in mind. In some cultures the need to alter the appearance of the body is expressed in a wide range of body mutilations.

Distortions in body image occur in all clinical groups and in normals. Disturbances in body ideas appears to have almost no limits in those with organic brain damage. A variety of bizarre body ideas occur in the psychoses.

There are all sorts of variables which may produce body image distortions in normal persons in the course of daily living. Schilder (11) refers to the very clear body image distortions that the individual may experience while dreaming. He may see himself as markedly elongated or short. There sometimes may be unusual combinations of male and female characteristics ascribed to the dream figures.
The wide range of body image distortions which have been observed seem to lie on a common continuum. The extreme distortions which occur in organic patients may be experienced by normal persons in situations of unusual stress. Fisher and Cleveland (p. 52) have attempted to place these distortions in categories of greatest frequency. Essentially, they are as follows:

(1) Feelings of loss of body boundaries between one's own body and that which is outside one's body.

(2) Sensations of depersonalization which revolve about a perception of one's body as strange, alien, and perhaps even as belonging to someone else.

(3) Attributing to one's body unrealistic qualities and extra parts.

(4) Confusion regarding the distinction between the right versus the left side of the body.

Human Figure Drawing as a Technique for the Study of Body Image

The basic hypothesis underlying figure drawing interpretation is that when a person responds to the request to draw a picture of a person he draws a picture of himself. This is sometimes referred to as the body image hypothesis. Machover (10) feels that the drawing of a person involves a projection of the body image as it has developed out of personal experience.
She states:

The process of drawing the human figure is for the subject, whether he realizes it or not, a problem not only in graphic skill, but one of projecting himself in all of the body meanings and attitudes that have come to be represented in his body image (10, p. 35).

Levy (9) feels that the drawing of a human figure frequently involves the projection of the body image or self concept. But, according to Levy, a drawing may also be

... a projection of attitudes toward someone else in the environment, a projection of ideal self-image, a result of external circumstance, an expression of habit patterns, an expression of emotional tone, a projection of the subject's own attitudes toward the examiner and the situation, an expression of his attitudes toward life and society in general (9, p. 260).

One approach to the test of the body image hypothesis has been to determine the physical characteristics of the individual, and then determine if these same traits are portrayed in the human figure drawn by the individual. Some of this research has made use of physically disabled subjects.

Silverstein and Robinson (13) studied the drawings of a group of children with chronic poliomyelitis. Using an inspection method they found that more than seventy-five per cent of their subjects portrayed a physical disability either directly or by displacement and distortion. But, when the drawings of this group of crippled children were compared to those of a normal group on a series of fifty-
five scoring signs it was found that the drawings of the
two groups could not be reliably distinguished. It was also
found that judges experienced in the psychodiagnostic use of
figure drawings were unable to differentiate the drawings of
disabled and normal subjects at a level better than chance.

Wysocki and Whitney (18) attempted to use the Draw-A-
Person Test to differentiate between crippled and non-crippled
children, with regard to body image. They found that thirty-
six per cent of the crippled children indicated in their
drawings an area of insult which corresponded to their own
crippling conditions. This test aspect differentiated between
crippled and normal children at the .01 level of significance.

Silverstein and Robinson (13) feel that some handicapped
subjects represent their disability in their figure drawings
while others do not. The meaning of this is not presently
clear. It may be that those who represent their disability
have accepted it and incorporated it into their body image,
and therefore, feel free to represent it. Those not repre-
senting their disability may be manifesting an unhealthy
denial of objective reality.

Berman and Laffal (2) rated a group of male neuro-
psychiatric patients and their drawings to determine the
predominant body type of each. The correlation between
type of figure drawn and body type was \( r = .35 \), significant
between .05 and .01 levels. They concluded that individuals
tend to draw the figures with which they are most familiar,
their own. They felt that their findings supported the hypothesis that figure drawing is, in part, a projection of body image.

Kotkov and Goodman (7) compared the male and female drawings of a group of normal weight women and a group of obese women. They found that only the same-sex drawings reflected differences between the two groups. This difference was in the greater area on the page covered by the obese female. They concluded that same-sex figure drawings, contrasted for weight, stand in what appears to be an isomorphic relation to actual body structure.

Silverstein and Robinson (14) attempted to assess the degree of correspondence between body structure and body image in a group of sixth grade children. They obtained a correlation of $r = .86$ between actual height and estimated height, and a correlation of $r = .95$ between actual weight and estimated weight, both coefficients being significant at the .001 level. When actual and estimated measures were correlated with corresponding measures on the figure drawings obtained from this group all correlations were negative, with only two being significant. A correlation of $r = -.33$ was obtained between estimated height and same-sex figures, significant at the .01 level. A correlation of $r = -.27$ was obtained between estimated weight and same-sex drawings, significant at the .05 level. These results indicate a somewhat close correspondence between body structure and body image.
as far as height and weight are concerned. But these results are not consistent with the assumption that the drawn figure directly represents the individual's body image.

There appears to be a social stereotype concerning the most desirable body structure. Staffieri (15) had a group of boys ranging from six to ten years assign adjectives of various behavior/personality traits to endomorph, mesomorph, and ectomorph silhouettes. He found that this group tended to assign favorable adjectives to the mesomorph image and unfavorable adjectives to the endomorph and ectomorph images. He also found that by the age of six or seven there was a clear preference to look like the mesomorph image.

Those who deviate from the more socially acceptable mesomorphic body structure appear to have a somewhat distorted body image. Schonbuch and Schell (12) had overweight, underweight, and normal weight male college students estimate their body appearance by selecting from a series of pictured physiques that one most nearly like their own. The members of the deviant weight groups made significantly more errors in estimating their body appearance than did members of the normal weight group.

Sugerman and Haronian (16), in a study involving male college students, obtained a correlation of $r = .29$, significant at the .01 level, between figure drawings rated for sophistication of body concept and ratings for degree of
mesomorphy. A correlation of $r = -0.24$, significant at the .02 level, was obtained between degree of endomorphy and sophistication of body concept. They concluded that those who rate high in mesomorphy have more sophisticated body concepts, and those who rate high in endomorphy have more primitive body concepts. Sophistication of body concept was considered to be a manifestation of the degree of satisfactory feelings or esteem for the body.

Problem

One purpose of this study was to determine if the actual physical dimensions of an individual are related to the dimensions of his human figure drawings. The specific physical dimension used in this study is that of stature or height.

Another purpose of this study was to determine if college males majoring in Physical Education might be superior to college males majoring in Industrial Arts in terms of their clarity of body image. A non-mesomorphic body structure appears to contribute to distortions in body image. It would be expected that the dominant body type of Physical Education majors would be mesomorphic (3). Tactile and kinesthetic stimuli are highly important in the formation and maintenance of body image. It appears that Physical Education majors may have higher sensitivity to these modes of sensation than certain other groups of majors in the male college population (8).
Hypotheses

Using the previously cited proposal by Levy (9, p. 260) as a theoretical basis the following research hypotheses were postulated:

(1) When Physical Education majors and Industrial Arts majors were instructed to "draw a person," the correlation between actual stature of the subjects and height of the figure drawn would not be significantly different from zero in each group.

(2) When Physical Education majors and Industrial Arts majors were instructed to "draw yourself," the correlation between actual stature of the subjects and height of the figure drawn would be positive and significant in each group.

(3) The correlation between actual stature and height of the self-drawings would be significantly higher for Physical Education majors than for Industrial Arts majors.
CHAPTER BIBLIOGRAPHY


2. Berman, Sidney and Julius Laffal, "Body type and Figure Drawing," Journal of Clinical Psychology, IX (October, 1953), 368-370.


CHAPTER II

METHOD

Subjects

Sixty-eight subjects were used in the study. One group was composed of thirty-three male Physical Education majors enrolled in two advanced level courses in physical education at a state-supported university in the Southwest. The subjects in the Physical Education group ranged in chronological age from nineteen years and eleven months to twenty-four years and ten months. The mean age was twenty-one years and three months, and the median age was twenty-one years and two months.

The second group was composed of thirty-five male Industrial Arts majors enrolled in two advanced level courses in industrial arts at a state-supported university in the Southwest. The subjects in the Industrial Arts group ranged in chronological age from eighteen years and eleven months to fifty years and five months. The mean age was twenty-three years and five months, and the median age was twenty-one years and ten months.

Description of Tasks and Apparatus

Two sheets of paper, 8½" x 13" in size, and a pencil with an eraser were given to each subject. Each sheet of
paper was divided by a horizontal line 2" from the top of the paper, leaving a space of 8½" x 11" for the subject's figure drawing. The space above the horizontal dividing line on the paper provided a place for the subject to place his name and age. It also provided a place for instructions to be printed. On one sheet of paper the subject was instructed to "Draw a picture of a person, a whole person, in the space provided below." On the other sheet of paper each subject was instructed to "Draw a picture of yourself, a whole figure, in the space provided below."

A ruler was used to measure the height of the figures drawn. These measurements were recorded in millimeters.

An anthropometer, manufactured by The Swan Tool and Machine Company, was used to measure the actual stature of the subjects. The anthropometer was calibrated in millimeters.

Procedure

The instructor of the two physical education classes and the instructor of the two industrial arts classes introduced the investigator to each class. The introduction was essentially the same for all classes. The instructor stated that a graduate student from the psychology department was gathering data for a study. The students were then asked to cooperate in the gathering of these data, and were encouraged to do their best work. The investigator then gave his name, stated that he was from the psychology department, and stated that he was gathering data for a study in perception.
The two sheets of paper, conveying the two differing sets of instructions, were then presented singly to all subjects by the investigator. Half of the subjects in each group first received instructions to draw a person and half of the subjects in each group first received instructions to draw themselves. The order of presentation was counterbalanced to avoid any possible ordering effects. Subjects were simply instructed to follow the printed directions. No other verbal instructions were given. When subjects drew an incomplete figure, they were asked to complete the whole figure.

Upon completion of both sets of figure drawings each subject's stature was measured by the investigator and was recorded by the respective instructor. Stature was defined as the distance from the highest point of the top of the head in the mid-sagittal plane to the floor (4). Subjects were measured without shoes or socks and standing free. When stature is measured standing free the subject stands naturally erect but unstretched, and free of the wall, with head adjusted to the Frankfurt Plane (1, 2).

All measurements of stature were taken between eleven o'clock in the morning and two o'clock in the afternoon. This was done to insure approximate equivalency of diurnal stature variation for all subjects (3).

The total height of each human figure drawing was measured. For the purpose of this study hats, shoes, and
other articles of clothing affecting the total height of the figure were included in the measurement. This is in line with Schilder (5), who feels that clothes are a part of the body image.


CHAPTER III

RESULTS AND DISCUSSION

Results

As stated in Chapter I, the following hypotheses were formulated for investigation:

(1) When Physical Education majors and Industrial Arts majors were instructed to "draw a person," the correlation between actual stature of the subjects and height of the figure drawn would not be significantly different from zero in each group.

(2) When Physical Education majors and Industrial Arts majors were instructed to "draw yourself," the correlation between actual stature of the subjects and height of the figure drawn would be positive and significant in each group.

(3) The correlation between actual stature and height of the self-drawings would be significantly higher for Physical Education majors than for Industrial Arts majors.

To test Hypothesis 1, two Pearson coefficients of correlation were obtained. One coefficient of correlation was computed between actual stature of the Physical Education majors and height of their "person" figure drawings. The other was obtained between actual stature of the Industrial Arts majors and height of their "person" figure drawings.
To test Hypothesis 2, two Pearson coefficients of correlation were obtained. One coefficient of correlation was computed between actual stature of the Physical Education majors and height of their "self" figure drawings. The other was obtained between actual stature of the Industrial Arts majors and height of their "self" figure drawings. The coefficients of correlation pertaining to Hypotheses 1 and 2, together with the appropriate tests for statistical significance, are listed in Table I.

TABLE I

PEARSON COEFFICIENTS OF CORRELATION, AND TESTS OF SIGNIFICANCE FOR ACTUAL STATURE AND HEIGHT OF THE TWO HUMAN FIGURE DRAWINGS IN BOTH GROUPS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>r</th>
<th>t</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual stature and Height of Person-Drawing</td>
<td>Physical Education Majors</td>
<td>-.02</td>
<td>-.11</td>
<td>N. S.</td>
</tr>
<tr>
<td></td>
<td>Industrial Arts Majors</td>
<td>-.07</td>
<td>-.39</td>
<td>N. S.</td>
</tr>
<tr>
<td>Actual Stature and Height of Self-Drawing</td>
<td>Physical Education Majors</td>
<td>.23</td>
<td>1.29</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>Industrial Arts Majors</td>
<td>.13</td>
<td>.74</td>
<td>N. S.</td>
</tr>
</tbody>
</table>

*One-tailed test.
The obtained $r$ between actual stature and height of person-drawing was not significantly different from zero, in both groups. Thus, Hypothesis 1 was confirmed.

The obtained $r$ between actual stature and height of self-drawing was not significantly different from zero, in both groups. Therefore, Hypothesis 2 was rejected. Although not significant at the accepted .05 level, both correlations were in a positive direction, and the correlation of $r = .23$ obtained for the Physical Education majors reached the .10 level of probability.

Hypothesis 3 was rejected. This was due to the failure of the correlations between actual stature and height of self-drawings to reach the accepted level of significance in either group.

Machover (5) feels that the projection of self-traits of the subject into his human figure drawings may be restricted to the figure of self-sex, may be directed toward the figure of the opposite sex, or may spread over the male and female figures drawn by an individual. However, some investigators feel that same-sex figures represent the drawer's projection of himself to a greater extent than opposite-sex figures (1, 3). In this study, when subjects were instructed to "draw a person," 91% of the figures drawn in each group were male figures.

Upon inspection of the data obtained, it appeared that there were differences between the two groups in mean actual
stature, and in mean height of their "person" and "self" figure drawings. It was decided that as an adjunct to the originally stated purposes of the study it might be useful to determine if these differences were statistically significant. Listed in Table II is the result of the test of significance for the difference in mean actual stature of the two groups.

**TABLE II**

**MEANS, STANDARD DEVIATIONS, AND TEST OF SIGNIFICANCE FOR ACTUAL STATURE IN BOTH GROUPS**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Actual Stature (in mm.)</th>
<th>s</th>
<th>t</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Education Majors</td>
<td>1,738.27</td>
<td>73.21</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Industrial Arts Majors</td>
<td>1,748.94</td>
<td>70.12</td>
<td>.61</td>
<td>N. S.</td>
</tr>
</tbody>
</table>

*Two-tailed test.*

As shown in Table II, there was no significant difference in mean actual stature. Listed in Table III are the tests of significance for the difference in mean height of the two figure drawings in both groups.
TABLE III
MEANS, STANDARD DEVIATIONS, AND TESTS OF SIGNIFICANCE
FOR HEIGHT OF THE TWO HUMAN FIGURE
DRAWINGS IN BOTH GROUPS

<table>
<thead>
<tr>
<th>Drawing</th>
<th>Group</th>
<th>Mean Drawing Height (in mm.)</th>
<th>s</th>
<th>t</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person-Drawing</td>
<td>Physical Education Majors</td>
<td>138.12</td>
<td>41.26</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Industrial Arts Majors</td>
<td>165.03</td>
<td>60.27</td>
<td>2.16</td>
<td>.05</td>
</tr>
<tr>
<td>Self-Drawing</td>
<td>Physical Education Majors</td>
<td>137.76</td>
<td>41.14</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Industrial Arts Majors</td>
<td>151.00</td>
<td>48.81</td>
<td>1.21</td>
<td>N. S.</td>
</tr>
</tbody>
</table>

*Two-tailed test.

Inspection of Table III revealed that the "person" and "self" figure drawings were approximately the same mean height in the Physical Education group. There was no significant difference between the mean height of the self-drawings. But the Industrial Arts group drew significantly larger figures than did the Physical Education group when instructed to "draw a person." This difference was significant at the .05 level.

Discussion

It was found that when subjects were instructed to "draw a person," no relationship existed between actual stature and
height of the human figure drawn. This finding suggests that when individuals are instructed to "draw a person," their physical size is not represented in their drawing. Since ideas about one's own physical size are a part of body image, the implication is that "person" drawings are not altogether a projection of body image. This is consistent with the contention of Levy (4) that when subjects are instructed to "draw a person," the figure drawn is usually a projection of a combination of factors.

Although not significant, the correlations obtained were in the direction consistent with the hypothesis that individuals represent their physical size in self-drawings. Also, these non-significant results were in the direction consistent with the hypothesis that certain groups are superior to others in the clarity of their body image. Although the representation of physical size in self-drawings was not demonstrated in these two groups of male subjects, this effect might well be demonstrable in certain other groups, such as athletes or female subjects (2). In future studies it might also be useful to utilize other measures, in addition to height.

When the Physical Education group and the Industrial Arts group were instructed to "draw yourself," there was no significant difference between the height of the figures drawn. When both groups were instructed to "draw a person," the Industrial Arts group drew figures which were significantly greater in height.
Industrial Arts majors are required to take courses in mechanical drawing. When creating or representing objects in this type of drawing, it is easier to achieve precision of details with larger scale drawings.

The instructions "draw a person" probably represents a greater degree of ambiguity than the instructions "draw yourself." Perhaps the significantly greater height of the person-drawing in the Industrial Arts group represents an attempt by this group to compensate for the ambiguity of the instructions by an increased structuring of the figure drawing. This structuring may have taken the form of greater detailing of the figure, accompanied by an increase in the size of the figure to allow for precision. The Physical Education group may have increased the detailing of their person-drawings also, to compensate for the ambiguity of the instructions. But possibly because of a lack of drawing experience, they did not increase the dimensions of their drawing to allow for precision of details.

In future studies, instructions might be rated as to their ambiguity prior to administration. In those groups with experience in mechanical drawing it might be expected that as the level of ambiguity increased, the size of the figure would also increase. Using groups without this drawing experience, figure drawings might be rated for degree of detailing. It might then be expected that, in these groups, the degree of detailing would increase as the level of ambiguity of instructions increased.
CHAPTER BIBLIOGRAPHY

1. Berman, Sidney and Julius Laffal, "Body Type and Figure Drawing," Journal of Clinical Psychology, IX (October, 1953), 368-370.


The purpose of this study was to determine if the actual physical dimensions of an individual are related to the dimensions of his human figure drawings. The specific physical dimension used was that of stature. Another purpose of this study was to determine if Physical Education majors surpass Industrial Arts majors in terms of their clarity of body image.

Sixty-eight subjects were used in this study. One group was composed of thirty-three male Physical Education majors enrolled in advanced level courses in physical education at a state-supported university in the Southwest. The mean chronological age in the Physical Education group was twenty-one years and three months. The second group was composed of thirty-five male Industrial Arts majors enrolled in advanced level courses in industrial arts at a state-supported university in the Southwest. The mean chronological age in the Industrial Arts group was twenty-three years and five months.

Two human figure drawings were obtained from each subject, and the total height of each drawing was measured. Each subject was measured to obtain his actual stature.

It was found that when the two groups were instructed to "draw a person," the correlation between actual stature of the
subjects and height of the figure drawn was not significantly different from zero, in each group. When Physical Education majors and Industrial Arts majors were instructed to "draw yourself," the correlation between actual stature of the subjects and height of the figure drawn was not significantly different from zero.

In an adjunct to the originally stated purposes of the study, it was found that there was no significant difference between the mean actual stature of the two groups. Also, it was determined that there was no significant difference between the mean height of the "self" figure drawings. But the Industrial Arts group drew "person" figure drawings significantly larger than those obtained from the Physical Education group. This difference was significant at the .05 level.

It was concluded that the figure drawn when a subject is instructed to "draw a person" is probably a combination of body image and a number of other factors. It was noted that the trend of the non-significant correlations obtained between the actual stature and self-drawings were in the direction consistent with the hypothesis that individuals represent their physical size in self-drawings.

It was also concluded that individuals may compensate for increased levels of ambiguity in instructions by increasing the structuring of the human figure drawing. This structuring may be expressed as a greater level of detailing. The differential magnification of the person-drawing in the Industrial Arts group
was perhaps due to the effect of an interaction between ambiguity of instructions and level of detailing by those with mechanical drawing experience.

It was suggested that in future studies, instructions might be rated as to their ambiguity prior to administration. In those groups with experience in mechanical drawing it might be expected that as the level of ambiguity increased, the size of the figure would also increase. Using groups without this drawing experience, figure drawings might be rated for degree of detailing. It might then be expected that, in these groups, the degree of detailing would increase as the level of ambiguity of instructions increased.

Although the representation of physical size in self-drawings was not demonstrated in these two groups of male subjects, this effect might well be demonstrable in certain other groups, such as athletes or female subjects. In future studies it might also be useful to utilize other measures in addition to height.
BIBLIOGRAPHY

Books


Articles

Berman, Sidney and Julius Laffal, "Body Type and Figure Drawing," *Journal of Clinical Psychology*, IX (October, 1953), 368-370.


Publications of Learned Organizations

Fisher, Seymour, "Sex Differences in Body Perception,"
Psychological Monographs: General and Applied,
Vol. 78, No. 14, Whole No. 591, edited for the
American Psychological Association, Inc. by